













PROBLEMS  
OF  
NATIONAL EDUCATION



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PROBLEMS  
OF  
NATIONAL EDUCATION

BY  
TWELVE SCOTTISH EDUCATIONISTS

WITH PREFATORY NOTE BY  
THE RIGHT HON. ROBERT MUNRO, K.C., M.P.  
SECRETARY FOR SCOTLAND

EDITED BY  
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## PREFATORY NOTE

RECONSTRUCTION is the watchword of the hour. Now of all the problems of reconstruction none is more important and insistent than that of Education. National education, and all that it stands for, have gripped the popular imagination to-day as they never did before. And at a time when in England and in Scotland educational measures of the first importance have been placed upon the Statute Book, the appearance of this volume is singularly opportune. These measures not only provide a starting point for further educational development. They also enlarge the scope and alter the focus of the existing systems. It is accordingly fitting that a careful review of these systems should be made available, in order that their weaknesses should be disclosed and remedied, and that the developments of the future should rest upon a sound and secure foundation. That ideal of course concerns administration rather than legislation. While it interests, in the first place, the men and women who are engaged in the work of education in the various educational establishments of the country, it can attain a full measure of success only in so far as it commands the sympathy and the

interest of the people as a whole. This is fully recognised in the recent legislation, which provides, with a view to action, various means for the discussion of educational questions, and for participation in that discussion by representatives of all classes of the community.

The Scottish Act is first and foremost a measure of educational devolution. The administrative system, which had proved unequal to the burden laid upon it, is reformed. Local authorities are set up for wide areas, possessed of large powers of initiative and of adaptation to local circumstances. They are to be elected by a method which renders possible the representation of every important section of educational opinion. The legislative changes, embracing, as they do, an extension of the school age from fourteen to fifteen, and the institution of compulsory education in continuation classes to the age of eighteen, mean, in effect, an extension of school influence for four years. Instruction in English, in technical subjects, and in physical exercises is provided for. Subjects bearing on æsthetic culture and on social life—including the duties of citizenship, of parenthood, and of leisure hours—also find a place. Local advisory councils, composed of persons specially interested in education, and a general advisory council, one of whose functions will be to investigate debatable educational questions, and to present a reasoned report of their conclusions for the consideration of the Department, are also important features of the new system. The civic

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ideal is thus rendered possible of attainment. The School and the University provide an educational ladder for the free ascent of the youth of the country.

In these circumstances it is probably superfluous to commend to the consideration of all who are interested in Education, and particularly to those who may be called on to take part in the great work of educational reconstruction and development, this careful review of our existing educational system from various standpoints. The object of the book and its method of production are fully explained in the Preface. The educational experience and authority of the writers will, I am confident, secure for their views the weight to which they are justly entitled.

ROBERT MUNRO.

*27th January 1919.*





## EDITOR'S PREFACE

### I

THIS book is the realisation of an idea of old standing, the production of a work on education toward which experts in each branch should make separate independent contribution. Education, whether as science or as system, has ramified so widely and overspread so many adjacent domains that any adequate survey of the whole field demands co-operative effort. Few, if any, can speak with authority on all departments of the subject. The exact form of the joint product has been determined by the facts of the situation. It is a book "for the times," and is intended to focus and direct opinion. While based on solid foundations of theory, it has everywhere an outlook toward national requirements and the solution of practical problems.

A critical stage has been reached in the educational development of the nation. We stand at the parting of the ways. Half-a-century of public education has afforded valuable experience. If happily it has witnessed progress, it has also revealed serious error and defect. Even had there been no war, new

measures would have been necessary, and a fresh advance was overdue. The War has quickened the pace, rendering imperative what might otherwise have remained in suspense, and at the same time making more evident the direction in which the hope of progress lies. Recent legislation has in part merely ratified opinions and satisfied demands a decade or more old; but in part it has broken new ground, and embodies aims and possibilities that had previously hardly dawned upon us. The War has been our monitor. Its havoc has taught us lessons which can neither be ignored nor forgotten.

Nor has the pressure of the time been without its positive advantages. It has done much to break down prejudices, to bring home the necessity for prompt and comprehensive measures of reform, and to promote a spirit of conciliation, concession, and co-operation. The benefits of organisation and united action have been made manifest, the value of trained intelligence has been proved, and as a nation we seem to be at last reaching the conviction that education is an asset of which far too little has yet been made.

England and Scotland have been drawn together by brotherhood in arms, by devotion to common aims, and sacrifice in the common cause. Educational legislation as embodied in the recent two great Acts follows parallel lines and affords evidence of approximation at many points. It aims at securing in both countries something like "equality of opportunity," at providing, at any rate, a minimum of

equipment for work, and of culture for leisure, and at protecting the young, still in pupilage, from exploitation, whether by parents or by employers on the look-out for cheap labour. Either country has been seeking to profit from the experience of the other, to mutual benefit. Principles and even details that apply to Scotland become, to an increased extent, applicable also to England—*mutatis mutandis* perhaps, but the *mutanda* tend to diminish in number and in amount, and in some instances to approach the vanishing point. The circumstances, economic conditions, and national character, however, differ so greatly that a uniform system of education throughout the whole island would be the reverse of a blessing. While England and Scotland approximate, and even at certain points coincide, either country will and should continue to pursue its own methods, and develop its system along its own lines. Only so can the requirements of both be met, and only so will the one have anything to learn from the other. To this Preface a summary is appended of the main principles of the Scottish Act, based for the most part on its exposition in Parliament by the Secretary for Scotland.

Illustration of what has been said will be found in several of the following chapters, if not to some extent in all. The Scotch Universities, for example, are distinctive in type, different in ordinances, curricula, and life from the English, old or new. Yet they are faced by many of the same problems in studies and in administration, and the article on them

(Chapter XII.) will afford a basis of comparative study from which the English educationist may hope to derive advantage. So is it with the position of the Classics (Chapter VII.), though much that is said in the article bears specially upon Scotland. Teaching as a profession again (Chapter XI.) has many analogies and parallels in the two countries. The other articles are of a still more general character, and in some instances are of almost as direct application to English as to Scotch schools.

The book aims at being a unity, though of the difficulty of accomplishing this aim no one can be more conscious than the Editor. A mere collection of independent essays, however valuable in itself, would scarcely have fulfilled the purpose in view, which is to present a series of related pictures of the chief departments of national education. While each contributor has had a perfectly free hand, a bond of common purpose runs through, and links up, the whole series. The Editor has acted as a sort of clearing house of ideas, and by memoranda, conference, and correspondence has endeavoured to distribute the topics of discussion, and to delimit the scope of each, so that it should at once cover its own ground, and at the same time encroach as little as possible upon that of others. Some degree of overlapping is scarcely to be avoided, and is not wholly an evil. The confirmation which comes from two or more independent witnesses possesses a corroborative value and an interest of its own. With

his qualification, the message is intended to be in its essentials unanimous. If discrepancies remain, as they well may where so many writers, each with freedom of expression, are concerned, it is to be hoped that they are slight, and not of material importance. After all, difference in details that are fair matter of opinion is not wholly to be deprecated: education has never claimed to be an "exact science."

The arrangement of the series almost speaks for itself. The opening chapter presents a review of the subject from the starting-point, 1870-72, traces the chief lines of movement and advance, and seeks to discover the present trend of things in various departments of educational activity. The more detailed studies naturally begin with the Physical side, which in the child's life takes precedence in time and claim. The Interests of Girls follow. Moral, Social, and Religious aspects of school life form a related group, while Classics, Science, and Technical Education may also conveniently be placed together. Teaching and Local Administration, if only instrumental, are of first-rate importance; the latter is all the more urgent as a new system is about to be introduced into Scotland. The Universities form the apex of the pyramid. Their future presents a problem of great complexity, whose solution must vitally affect education all along the line; so far as concerns higher education at any rate, with them lies the last word.

The volume makes no pretension to be exhaustive.

In a work dealing with public education such an aim is nowadays hardly feasible.

The writers are representative of the University cities, the four great educational centres of Scotland. Choice has been a matter of much difficulty, and the one regret is that, of the many excellent educationists of these and other centres, such a limited number could be invited to co-operate. The University of Glasgow has no direct representative. A very distinguished member of it, whose assistance it was hoped to enlist, was obliged to decline the invitation on account of the pressure of engrossing duties. As the object of the book is to aid in the rebuilding of the national life and the redemption of the rising generations, our universal sentiment has been that it is "war work" in the fullest sense of the term.

For the plan, distribution of topics, and arrangement, as well as for the selection of contributors, the Editor is responsible; for the views and opinions expressed in the various chapters the writers are responsible. As already indicated, complete liberty has been accorded to all—with the possible exception of the Editor, who has been satisfied with acting as "Warden of the Marches."

Cordial thanks are due to the contributors, one and all, for their hearty and generous co-operation, which has rendered the Editor's task, if not a sinecure, at any rate a genuine pleasure. Not one has failed. The preoccupation and strain of war work, indisposition, and positive illness have all been encountered

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only in order to be overcome. We are under special obligation to the Secretary for Scotland (The Right Honourable Robert Munro) for his ready and valued aid. As author of the Education (Scotland) Act, 1918, he speaks with unrivalled authority, the seal of which he has set upon our joint labours. To Professor J. Arthur Thomson the volume owes much. His imprimatur to the scheme when first mooted imparted the initial impetus; his constant advice and assistance during its progress and fulfilment have been invaluable. Acknowledgment is also due to the publishers and the printers; to Messrs. Macmillan & Co. for the generous spirit in which they have taken up the book, and to Messrs. R. & R. Clark for their accuracy and despatch.

Καὶ εἰ μὲν καλῶς καὶ εὐθίκτως τῇ συντάξει, τοῦτο καὶ αὐτὸς ᾗθελον· εἰ δὲ εὐτελῶς καὶ μετρίως, τοῦτο ἀφικτὸν ἦν μοι.

JOHN CLARKE.

OLD ABERDEEN, January 1919



## II

## THE EDUCATION (SCOTLAND) ACT, 1918

The Education (Scotland) Act, 1918, is a measure of first-rate importance. It is not without significance that "the Education (Scotland) Acts, 1872-1918," stands as the designation of the educational legislation of the past half-century, of which the recent Act forms the latest chapter. And if experience has taught one lesson more than another during this period, it is that the story is "to be continued." Education knows no finality. Like life itself, of which it is the handmaiden, it is in a continual process of evolution. High hopes were founded on the advent of popular education in 1870-72, some of which, but not all, have been realised. We shall do well now to hope warily. That a great forward step has again been taken is unquestionable. How far exactly it will carry us no wise man will venture to predict. But it may save disappointment, and at the same time help to direct effort to its goal, if we make plain to ourselves, as fully as is at the moment possible, what it means, so that we may be prepared to amend and to supplement as the occasion arises.

Education is an essential factor of democracy. That is the keynote of the recent Acts. While it primarily concerns the school and the teacher, it can

attain its full measure of success only in so far as it commands the sympathy and the interest of the people as a whole. A people cannot truly rule itself until it is educated. Education must become more and more a common possession of a free people; practically everything follows from that.

In furtherance of such ends, the Act aims at two chief objects. The first and less important is the improvement of administration. By some this may be regarded as mere machinery, and yet it is vital. The small administrative area, the unit of the great majority of school boards, has in process of time become more and more unsuitable for its purpose. Education is one throughout all its grades. Its organisation must be organic throughout. It is only a large area that can effect co-ordination among the various grades — primary, intermediate, secondary, continuation, technical right up to the doors of the University, if not also within. The experience of England since 1902 has shown conclusively what advantages may accrue from unification of organisation and management throughout self-contained areas of sufficient size. Scotland will now benefit from the application of similar principles. The constitution of the education authority still differs in the two countries, and in Scotland to a greater extent than in England education remains a separate local interest, or at least a semi-detached sphere of action. Its closer co-ordination with other branches of the public service, particularly public health and poor law, is

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no doubt desirable. But for the present it has been resolved to create independent supreme education authorities for counties and for the five scheduled burghs. On them has been thrown the full responsibility of working out schemes of educational reorganisation for their respective areas. A distinctive feature of these schemes is that they will include scales of salary for teachers employed by the authorities; and the hope may be entertained that by this means a solution will be found for a problem that has caused much unrest and dissatisfaction during recent years. The method of election of the authorities by proportional representation gives a fair field to all interests. The new administrative system makes the people, the nation as a whole, responsible for the efficiency and success of its educational system.

By a further process of devolution through school management committees, every district and school will be kept in touch with the main education authority. United aim and effort are thus rendered possible both in the area as a whole and throughout its several parts. An important feature is the creation of advisory councils. Each local authority will be assisted by a local advisory council, "consisting of persons qualified to represent the views of bodies interested in education"; and there will also be a general or national advisory council, for the most part representative, to advise the Scottish Education Department on current educational questions. By these means the central

and local authorities will be brought into more intimate and fruitful co-operation, and a harmonious balance will be established and maintained between the various parts of the necessarily complicated machinery.

But it is in the more strictly educational provisions that the core of the Act lies. They aim at securing additional opportunities and improved means of education. Their one object in fact is the better education of the people of Scotland. Their scope and import must not be overshadowed and obscured by the machinery by which they are to be carried out. The War has brought to light three significant facts : (1) The general standard of education is lamentably deficient ; (2) the exploitation of child labour in the interests of parents or of employers has been a fruitful source of educational failure ; (3) the supply of fully educated men and women has been quite inadequate to the needs of the nation.

The Act will in the first place prevent the leakage due to juvenile labour. It will see to it that the energies of children are not sapped by physical toil, and thus impaired for what ought to be their main occupation at that stage of life.

The more mandatory provisions for the other two objects may for convenience be grouped together. Better education and more education are an urgent necessity, national and democratic. We require to mobilise the intellectual resources of the nation against the arduous times that lie ahead, when

“parts” developed by education will be of more and more account. Experience tends to show, has indeed shown, that brains, capacity, talent—whatever name we prefer—are not the prerogative of any one class, but are diffused in an irregular and uncertain fashion through all classes, though unfortunately in many cases arrested, stunted, perverted through lack of training. All this store of potential capacity must be conserved for the nation. Every source of energy must be tapped. In order to recover the concealed gold, the whole body of ore must be treated. Every child of every grade of society must have his chance. No one will henceforward be precluded from the full advantages of education, until he (or she) has proved his inability to benefit by them. Equality of opportunity will become a reality, so far as legislation can make it so. No distinction between higher and lower grade will be drawn artificially. It will be left to reveal itself automatically in process of treatment. Greater variety of method will be rendered possible and will be adopted. Material refractory under one course of treatment may respond to a different method. For example, many pupils, particularly boys, who appear to show no aptitude at all for school studies, the practical bearing of which they may fail to appreciate, not infrequently develop ability in some special direction when they are released from school, thrown on their own responsibility, and brought to concentrate attention on studies relative to their employment. And there are

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numerous other varieties of pupils for whom education at present does far less than it might do. The future will endeavour to prevent this waste and failure, and to secure for each and all their chances in life.

Under the reformed national system the school age is extended from 14 to 15, and continuation education is made compulsory during the three subsequent years. At one stroke four additional years of schooling are provided during the most critical and formative period of life. At the beginning of school life, too, the establishment of nursery schools, where required, will remove a serious handicap under which many children now suffer almost irreparable injury.

The increased facilities of the intermediate and continuation stages will bring to light a large store of potential talent and energy, and will turn it to best advantage. The State must have "some comfort" from every pupil with talent of any kind. The annual output of the secondary schools, represented at present by some 2000 boys and girls, must be indefinitely increased if the nation's wants are to be adequately supplied. The professions can scarcely obtain sufficient recruits. Industry and commerce have crying wants to enable them to keep their place in the fierce competition and international rivalry of the future. More experts and better experts are urgently needed in chemistry, engineering, shipping, banking, and all the pivotal occupations of our vast,

empire. Only on a broad solid foundation of general education, up to at least the age of 15, can such specialisation be built; and this union of breadth with depth is one of the main objects of the reconstructive programme. The specialised education itself will be begun in the continuation school, and will be carried forward, as at present, by colleges and universities, and, if need be, by other institutions, all specially equipped and fully staffed for the purpose.

The possibilities of extended education for the mass of boys and girls is not less important or urgent than the training of the specialist. Each member of the community contributes to the health and wealth of the State, each is a prospective citizen, each is a moral being whose life and destiny are largely dependent upon education. The close bearing of the Representation of the People Act upon the Education Acts is here revealed. The latter makes possible the fulfilment of the former, and at the same time renders the extended franchise a measure of benefit rather than of danger. Its general effect is to bring the civic ideal into the foreground, and so to promote the attainment of that "social efficiency" which is a prime requisite and condition of sound democracy.

The Act, for example, lays down as obligatory subjects in all continuation classes :

- (a) Instruction in English language and literature, and other parts of a general education ;

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(b) Special instruction relative to the employments in which the pupils are engaged ;

(c) Physical exercises adapted to the age and physique of the pupils.

Among other subjects that will naturally form a portion of the curriculum are those bearing on æsthetic culture and social life. The most serious consequences are involved in the employment of leisure, in the performance of the duties of parenthood, in the exercise of the franchise. The provision of the resources of a healthy moral life and the promotion of good citizenship in these and other ways must be the great functions of continuation education as it affects the mass of the people. It is only in the later years of adolescence that instruction in subjects such as parenthood and citizenship becomes appropriate or intelligible. Those who have benefited most from continuation classes will be the most eager to pursue their studies independently after 18. History, economics, sociology, languages offer wide additional fields of inquiry. They lie at the root, too, of economic practice and success. The age of 18 does not witness the completion of the adolescent education of either sex, but by that time young men and women ought to be prepared voluntarily to follow up the instruction they have received, whether by themselves or in classes specially designed to meet their requirements.

The administrative and the educational provisions



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of the recent Act thus briefly adumbrated will be found in their working to react one upon the other. They embody a scheme of education of the people, for the people, administered by the people, directly or indirectly financed by the people. It must in the long run be such as the people make it, and as the people deserve.

J. C.

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## FIFTY YEARS OF SCOTTISH EDUCATION

### RETROSPECT AND OUTLOOK

THE past half century has been a period of momentous change and unprecedented advance. Far-reaching discoveries and their practical applications in various fields have largely altered the material setting of our lives, and have, as Lord Beaconsfield declared, "affected social conditions and modes of life more profoundly than all the laws and codes of centuries." Accompanying these changes, partly as cause, partly as consequence, there has been an equally remarkable advance in our social, political, and economic ideas. No formula expressing the prevailing tendencies of thought in the 'seventies will represent the ideas and ideals of to-day. The wheel has come round almost full circle, from individualism to collectivism, from competition to co-operation, and from the doctrine of *laissez faire* to that of State control.

Amid the flux of these years it would be strange indeed if education were found to stand still. Education is never independent and self-contained, any more than it is casual or fortuitous. It is always in large measure a reflex of the conditions in the wider

world of national ideas, and derives its inspiration and energy from the great movements of the time. Education follows, it does not lead, national opinion, and too often it follows afar off, for, like religion, it is essentially conservative in its outlook, and responds but slowly to changing needs. A cataclysm like the recent War, however, shakes tradition and prejudice in their strongholds, and education in the coming years will undoubtedly be more sensitive and responsive to the spirit of the times than ever before.

Progress in education during the past half century does not "leap to the eye," as it does in more material spheres, but it is none the less real and momentous. From time to time fits of depression seize the national mind when regard is had to certain aspects in our public life—the love of pleasure, the craving for excitement, the passion for wealth, the poverty of ideals, the irreverence and indiscipline of so many classes. It is necessary, however, to maintain a proper perspective and proportion in this matter. We must not demand more from school education than can justly be expected of it, having in view its incompleteness, its early termination, and its still tentative methods. It is necessary to take long views and whole views, and not mistake the temporary and transient for the constant and permanent. We must not confuse the retreating wave with the advancing tide. When disappointment with educational results again lays hold of us, let us lift our eyes to the example set by the youth of the nation in these testing days. Their intelligence and resources have been equalled only by their devotion

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and self-sacrifice. Education, defective, incomplete, truncated though it be, has gone far to save the nation.

Progress has been defined as the rise in the quality and quantity of work in any department of affairs. In both respects education can show a marvellous record. The school population has more than doubled. The number receiving higher education has increased tenfold. Illiteracy has disappeared. To-day education concerns itself with the whole life of the child, mental, moral, physical. It has ceased to be fragmentary, and has become organic. The school is no longer an isolated unit, divorced from the national life. It has become merged in the great communal current in which are united all the forces and agencies making for social amelioration and national progress.

A full record of the steps by which this has been achieved is impossible within the compass of this review. All that can be done is to trace in broad outline the main features of the movement.

### LEGISLATION

The Report of the Royal Commission on Education in Scotland, presided over by the Duke of Argyll, which was issued in 1867, forms a suitable starting-point for our survey, as it presents a vivid and detailed picture of the educational conditions of the whole country at that time. From this we see that Scotland had been in possession of a national system of education for nearly two hundred years.

By the Statute of 1696 every parish was required to erect and maintain a school for the children in its area, and to provide a salary for the schoolmaster. This Act was but a belated instalment of John Knox's great conception of a national system of education as set forth in the First Book of Discipline, 1561. Owing to the rapacity and greed of the nobles that scheme had remained only "a devout imagination," but it was treasured as an inspiring ideal by his countrymen, and in these later days it has come to something like complete realisation.

From time to time strenuous efforts were made by the national Church to increase the number of schools, and other denominations were no less mindful of the claims of education. After the Disruption in 1843, the Free Church alone erected more than 600 new schools. The total school roll in 1867 was given as 431,000 or 1 in 6.5 of the population, as against 1 in 6.2 in Germany, where education was compulsory.

The Commissioners reported that the parish school system, even with the help of denominational and private schools, entirely failed to meet the educational needs of the people, more especially in the large towns and in the Highlands and Isles. In regard to the quality of the instruction and the attainments of the pupils the report was much more favourable. This need occasion no surprise when we recall that Horace Mann, when on a tour of inspection through Europe at an earlier date, declared, "In the thoroughness with which they teach the intellectual part of education the Scottish teachers furnish a model worthy of being copied by the world."

The Commissioners, in advocating the establishment of a real national system, pointed out that the main features of such a system would not meet with any opposition in Scotland. Assessments for school purposes, the operation of a conscience clause, compulsory school attendance, were already operative in some measure in the existing system. Even the new idea of popular control was not alien to Scottish ways of thought, as government by and through the people was the basis of the whole ecclesiastical structure of the country.

The Education Act of 1872 gave effect to the recommendations of the Commission, but unhappily several objectionable features, such as the cumulative vote, were introduced into the Scottish measure from the English Education Act of 1870. In several of its provisions, however, the 1872 Act differed widely from that of 1870. It was an "Education Act," not an "Elementary Education Act," as was the latter. Its object was to provide education for "the whole people of Scotland," and not merely for the labouring classes, as was implied in the English measure. The Scottish Act contained no restrictions in regard to the amount of the fees, the age of the pupils, and the nature and extent of the education to be given in the school. Some of these limitations were eventually imposed on the Scottish system by provisions in the Code, but they formed no part of the original Bill. From the outset a Cockerton judgment was an impossibility in Scotland. Since 1872 repeated efforts have been made, some of them successful, to remedy the more glaring defects in the original Act.



They have mainly been directed to strengthen and simplify the machinery for enforcing compulsory attendance, to raise the school age, and to restrict the employment of children of school age.

The Education Act of 1908 represented a more ambitious effort to enlarge the scope of the 1872 Act. For the first time the legislature, in framing the provisions of the new Bill, recognised the essential unity of all the educational forces, and had regard to the whole well-being of the child, mental, moral, and physical. The medical examination and treatment of school children and the provision of meals for necessitous pupils were brought within the province of the local education authorities. It is too early yet to estimate the full effect of these provisions, but already medical examination has revealed an appalling amount of preventable suffering, and has made it abundantly clear that one of the most insistent of our national problems is the improvement of the physical condition of the people.

The 1908 Act also conferred on school boards increased power in regard to enforcing attendance at continuation classes. But the inherent weakness of these bodies, save in a few of the large cities, has rendered them incapable of exercising any powers for which there was no legislative compulsion.

#### ADMINISTRATION

The administration of these legislative measures was entrusted to two bodies, the Scotch Education Department and school boards. It was clearly the

intention of Parliament that the latter should be active and efficient partners in the direction of national education. The Education Department itself, when taking over in 1878 the powers of the temporary Board of Education, declared that upon school boards lay the responsibility for administering education in their respective districts, and that in discharging these duties and responsibilities the Department wished to interfere as little as possible. Almost from the outset, however, these local bodies, save in the larger towns, were overweighted with their duties. They had neither the initiative nor the knowledge to direct educational policy; and, to prevent the total paralysis of educational effort, the Department had more and more to take matters into its own hands.

In stating the case thus against school boards there is no intention of belittling the services they have actually rendered. They represented probably a necessary and inevitable stage on the path of progress, and the main ground of complaint against them is that they have long outlived their original usefulness. The first school boards indeed did notable service. They attracted to themselves some of the ablest and most enlightened citizens, and these addressed themselves to their task with such energy and enthusiasm that, within the short space of five years, the accommodation was increased by 282,000 school places and the attendance by 227,000. It would be ungenerous not to recognise the devoted and unselfish labours of individual members of school boards great and small. Some of these gave un-

grudging, enlightened, and sympathetic service over a long period of years without any recognition from the State or tangible appreciation from the community. The system also produced another kind of member, of whom the less said the better.

The Scotch Education Department, thrust into prominence through the breakdown of the school board system, has long been the target for ill-informed and ungenerous criticism. If it has been compelled to establish a form of despotism, it can claim that circumstances left it little choice. In any case the despotism has been a benevolent one, and has been directed to serve the highest interests of the nation.

The origin of the Department goes back to 1839, but for our purposes it may be regarded as beginning in 1872. In that year a separate Committee of the Privy Council was set up to administer Scottish Education, but the Lord President and the Vice-President of the Council acted as the responsible chiefs of both the English and the Scotch Committees, and the same permanent official, Sir Francis Sandford, was secretary to both bodies. The English connection thus established lasted till 1885, when the Scotch Department was made independent, and Mr. (now Sir) Henry Craik became permanent secretary. There can be no doubt that this period of tutelage to England resulted in grave educational loss to Scotland. In 1872 England was at least a generation behind Scotland in its educational ideals and practice. Yet it was English ideals, English standards, English classifications that ruled in Scotland for more than a decade. This criticism may without offence be made now in view

of the fact that England has made up the leeway and in certain fields has even gone ahead of Scotland.

With the advent of an independent Education Department, Scottish education once more resumed its onward course. Educational policy became vitalised through the stimulus of a clearly defined aim. That aim was the education of the whole being, mental, moral, and physical, by means of a complete and well-articulated system of national schools, staffed by an adequate and highly trained body of teachers.

For the considerable measure of success that has already been attained, great credit must be given to the successive heads of the Department. It has been said that one of the chief lessons to be derived from our experience in the War is the triumph of individuality, of the trained directive intelligence of a strong personality, over system and machinery. Our experience in education certainly bears out that view.

The constitution of the Education Department is not by itself one well calculated to secure favourable results. It is out of touch with the springs of national life, without knowledge of the needs of special localities, and without parliamentary control, save in name. But the two successive chiefs of the Department, Sir Henry Craik and Sir John Struthers, have wrought this refractory element to their will and done great things for the national advancement. At the same time this very masterfulness is a source of danger in the long run to the system they have created. The Department tends to become a sort

of educational Providence controlling and directing everything down to the minutest detail. The Scottish system of education, excellent though it be, is lacking in initiative, in experiment, in spontaneity. It has grown so used to government that it no longer sufficiently uses or even values such freedom as it possesses. The present heads seem to be fully alive to this danger, and in the recent Act provision is made for a great scheme of devolution granting to the new authorities powers greater than those of their predecessors, powers which indeed the latter would have been unable to wield. The creation of a strong national council of education will give to the Department the support that comes from contact with national sentiment and the living interest of the people. With these auxiliaries, the Education Department, no longer "Scotch" but "Scottish," may well look forward to new and still greater triumphs in the field of national education.

#### SECONDARY EDUCATION

A distinguished foreigner declared some years ago that the education system of Scotland was the most paradoxical in the world. "In that country secondary schools are primary, and primary schools are secondary." We must accept the truth, though not necessarily the censure, implied in the statement. The explanation is to be found in the historical development of these schools. The scheme of education projected by Knox made provision for a carefully graded system of schools, each with its own clearly

defined curriculum and aims. That system, we have seen, failed to materialise owing to the cupidity of the nobles, who seized the revenues intended for education. The poverty of the country did not allow of this graded system being carried out at the people's charges, and so a compromise was sought whereby the benefits of education should be made as wide-spread as possible at a minimum cost. For this purpose the parish schools, which in the original scheme were purely elementary, were encouraged to provide at least the elements of a secondary education. So well did these schools play their part as centres for higher education that the Argyll Commission reported in 1867 that over 50 per cent of the students attending the four Scottish Universities came direct from parish schools.

The burgh or grammar schools, which were the true secondary schools, owing to the competition in their proper domain of the parish schools, were compelled to open their doors to primary pupils who were prepared to pay increased fees for the privilege. It is in this way that both types of schools became universal education providers, and gave to Scotland an education system far removed from the highly specialised character of Continental schools. The general effect of this policy was to depress secondary education in the higher reaches, but greatly to raise the level for the whole country. Through it, indeed, Scotland possessed for more than two hundred years the most democratic education system in the world, and to a considerable extent in consequence of this it has enjoyed an influence and importance in the

world altogether out of proportion to its size and population.

The tradition thus established persisted long after the need for it had passed away. The Education Act of 1872, in transferring the burgh schools to the school boards, urged that they should be restricted to purely secondary work, but the recommendation passed unheeded. The burgh schools, until recently known as higher class schools, still continued to maintain a primary department, while the best of the ordinary public schools, the successors of the parish schools, continued to offer a full course of secondary education.

The history of the burgh or higher class schools was for many years after 1872 a somewhat chequered one. They were unable to share in the local rates or to draw upon imperial grants, and were entirely dependent upon their fees and scanty endowments. An Act was passed in 1878 giving to school boards the power to utilise the rates for the purpose of "maintaining the higher school buildings and providing efficient education in them." Unhappily the legal advisers of the Department held that the cost of teachers' salaries was not a proper charge under this head, and so the Act brought no real relief in the quarter where it was most required.

The renaissance of secondary education, like that of elementary education, begins with the creation of a separate Education Department for Scotland in 1885, but in the former case there was a long and anxious twilight before the full dawn. The inspectors appointed by the Department in 1886 to investigate

- the conditions in higher class schools presented a somewhat depressing report. The staffs were found to be inadequate and underpaid, the curricula far behind the times, and the methods antiquated and ineffective.
- The Department, sympathetic, considerate, eager to help, was yet unable to provide the only assistance that would avail—money. That, too, came in time; in 1892 and 1898 funds specially designed for these schools were made available. In 1899 the administration of science and art grants was transferred from South Kensington to the Education Department, and the money thus placed at its disposal enabled the latter to institute and complete a carefully articulated system of schools, and to substitute in them a real organic curriculum for the atomised courses that had hitherto prevailed. A full course of secondary education was regarded as covering a period of five or six years, and divided into two stages. One, known as the intermediate course, occupied the first three years, during which pupils followed a practically uniform course consisting of English, a foreign language, mathematics, science, and drawing. A second foreign language might be added, but the Department rather frowned upon this extension of the course. Beyond the intermediate stage the pupils pursued for two or three years a course, known as the post-intermediate, in which the principles of specialisation and electives received ample recognition.
  - It will readily be granted that one of the most important factors in the advance that has characterised the methods and results in secondary schools has been the institution of the system of leaving certifi-



cates. Introduced into the higher class schools in 1888, it was soon extended to all public schools doing higher work. If space permitted, it would be interesting to trace the history of its development and the modifications in its character and conditions that have resulted from the growing enlightenment of educational opinion. Strictures might also require to be passed upon certain of its existing features. At the outset the system differed fundamentally from the German conception of leaving certificates. Certificates were awarded on the results of a purely external examination, although an endeavour was made, but not very successfully, to keep in touch with school programmes by means of visits of inspection. These certificates were granted, not for success in specified groups of subjects, nor for the satisfactory completion of an approved school course, but for passes in the separate subjects of higher instruction. In this way pupils could boast of being in possession of four, five, and six leaving certificates. All this has now been changed, and a single certificate marks the successful close of the intermediate and post-intermediate stage respectively.

#### THE EDUCATIONAL IDEAL

##### *Primary Stage*

The legislative aims and the administrative machinery of the period having been thus briefly outlined, it is now time to consider the changing educational ideals, as these are reflected in the Codes and Minutes of the Department and in the curriculum

of the schools. As might be expected during a time of transition like the last half century, ideals are seen to undergo profound modification. In them the influence of new tendencies in our social, political, and economic outlook may clearly be traced. While it is necessary and inevitable that the school should respond to national sentiment, it should not be made to reflect every impression which the fashion or mood of the moment throws up. Evidence is not wanting that those responsible for our educational policy have at times failed to distinguish between temporary and sectional phases of opinion on the one hand, and permanent and national movements on the other. Here, however, it is only fair to recognise that the Education Department, apart from the grave mistakes of the early years, has pursued a singularly enlightened policy and, without much assistance from the legislature, has kept in the van of educational progress.

It is fortunately unnecessary to trace all the changes in our educational aims during the period under review; omitting unessentials, these will be found to group themselves in three well-defined periods:

1. The period of Decline . . . 1872-1885
2. The period of Revival . . . 1885-1899
3. The period of Consolidation . . 1899-1918

1. During this period the educational ideal reflects the material huckstering spirit of the times. Education was regarded as a matter of buying and selling, and knowledge as a commodity to be parcelled out like groceries. The true aims of instruction were

forgotten, and the formative value of education was sacrificed to the informative. The three R's formed the staple of instruction, and every snippet of additional knowledge in the shape of "Specific Subjects" was paid for at so much a head. Ossa was piled upon Pelion in the vain hope of reaching the educational Olympus. There was no attempt at correlation of subjects, and the idea of the synthesis of knowledge had yet to arise. That was the period of "payment by results" and individual examination, surely the most extraordinary method of educating a nation ever devised. The system was founded on the radically false hypothesis that children are of equal capacity, that they are placed in equally favourable environment, and that they develop at equal rates. Teachers were compelled through grant-earning pressure to build upon these false premises, and in the "result" the mental and moral outlook of a whole generation was warped and twisted. Teachers who served through these painful days look back with shame and confusion of face upon the cruel pressure and driving to which children were subjected.

2. The Code of 1886, the first fruits of the reconstituted Education Department, marks the advent of a new and better educational ideal. Individual examination, with "payment by results," was abolished in the lower standards, and in 1890 the reform was completed by being extended to all divisions of the elementary school. At the same time the curriculum was enriched by the introduction of class subjects, like English, geography, and history. The result of these reforms was soon

apparent in an improved tone and a brighter outlook in the schools. The evils, however, that bad systems create live long after them, and echoes of this particular one still resound in some of our classrooms.

3. Between 1899 and 1904 the Code underwent radical transformation, and the general lines of policy there outlined have continued down to the present day. Sir Henry Craik in a circular letter to school managers gave expression to the new educational ideal in terms which are reminiscent alike of the fine spirit of the Renaissance and of the opulent mind of Greece. "School work should aim at producing the useful citizen, imbued with a sense of responsibility and of obligation towards the society in which he lives. It should render him -so far as the school can do so -fit in body and alert in mind, and should prepare him for the rational enjoyment of his leisure."

It cannot be said that the concrete proposals for giving effect to these aims showed the same clear vision, but they at least marked a great advance on previous practice. The annual examination which tended to fetter free teaching and free classification was abolished. Nature study, drawing, music, were given a prominent place in the curriculum. The whole gamut of specific subjects was swept away. In their place was set up an organically connected curriculum, in which essential subjects like reading, writing, and arithmetic were reinforced by a wide range of auxiliary subjects calculated to promote intelligence, observation, and self-expression. Provision had also to be made in the plan and time-

table of study for training in manual and recreative exercises, and in morals and manners.

The raising of the school age to 14 by the 1901 Act compelled the Department to readjust the school course in order to utilise to the best advantage the new year of school life. For this purpose a certain element of gradation was introduced into the whole school system. The common foundation was the primary school, terminating for the average pupil about the age of 12. The successful completion of this stage was tested by means of a qualifying examination implying a knowledge of fundamentals sufficient to justify promotion to a higher stage. A pupil on passing this examination was free to go on to secondary education in a higher grade or higher class school, or to enter upon what is termed the Supplementary Course of the primary school. The object in the latter course is to revise and consolidate past knowledge, and at the same time to give a certain amount of specialised instruction in subjects likely to have a direct bearing on the life-work of the pupil.

Educationally, these courses have not proved a success, except in the larger towns where the work has been centralised. They represent, if not a surrender, at least a concession, to the demand for vocational education. The Department expressly disclaims any such intention, but it is difficult to accept this point of view. The raising of the school age provided for in the new Education Act will afford an opportunity for revising the whole course of instruction at this stage, and of banishing from it

all appearance of direct training for a career. The proper time for that is between 15 and 18 years. Till then the aim should be to lay broad and deep the basis of general education.

### *Intermediate Stage*

It will readily be granted that the intermediate curriculum, which provides instruction in English, mathematics, science, drawing, and at least one language other than English, is framed on sound educational lines. It maintains a nice balance between formal and utility subjects, and is calculated to suit the aptitudes and needs of many types of pupils. As a directive syllabus it is admirable, but as a compulsory course to be followed by all pupils it must stand condemned. It allows no scope for experiment, and it is only by experiment that true progress can be made. Alternative curricula allowing of differentiation between courses taken by boys and girls are urgently needed. The importance for girls of the study of hygiene and the domestic arts is so evident that a place should be found for them in the intermediate curriculum. It is questionable whether the time spent at present on pure mathematics gives in most cases any adequate educational return, and girls taking up domestic subjects might with profit have their mathematical studies limited to arithmetic.

The science syllabus requires remodelling on the lines suggested by the recent Committee on Science teaching in schools (Cd. 9011). Too much time is at present spent on measuring and weighing, valuable as

these are in their place, and there is a serious loss of time through failure to make any use of the demonstration method of teaching. Efforts should be made at some stage of the course to open up to the pupils vistas of the vast field of science, and to bring them into touch with the inspiring story of the heroes of science, and of the methods of their discoveries.

#### *Post-Intermediate Stage*

In the post-intermediate stage—15 to 18 years of age—the principles of specialisation and electives find ample recognition. It is true that one course, known as the "normal course," has been laid down by the Department as the one most likely to afford a liberal and well-balanced education. But it is optional, not compulsory, and in practice has been found sufficiently flexible to meet the needs of the great majority of pupils. This course comprises the advanced study of English, a foreign language, mathematics or science, and one other subject. But in addition, provision has been made for giving approval to any course based on sound educational principles, and making appeal to definite groups of pupils. Full advantage is taken of this concession to frame courses specially adapted for pupils preparing for the professions and for various forms of industrial life. But little, if any, organised effort has yet been made to draw up curricula designed to prepare pupils for a commercial career. The responsibility for this can hardly be said to lie with the Education Department, local education authorities,

or teachers. They have made repeated efforts to secure the interest and co-operation of business men in the improvement of commercial education, but so far to little purpose.

The fact is that the great majority of business men look with profound distrust on all forms of commercial education that have not been acquired in counting-house or warehouse. They believe that native shrewdness combined with practical experience will serve to maintain us in the race of the nations, as they like to believe it has done in the past. They do not realise the scientific, co-ordinated, and co-operative assaults that are being made on our markets by foreign rivals, nor the extent and thoroughness of the educational equipment of these competitors. As a nation we are still obsessed by a deep-rooted insular contempt for the foreigner and all his ways. There is fortunately clear evidence that the nation's trying experience during the past four years has shaken the confidence of many business men in their old methods, and the time is opportune for a renewed effort by education authorities to get into touch with the commercial community in order to bring business education into line with industrial and professional training.

#### THE TREND IN EDUCATION

In the study of present-day tendencies will be found the surest guide to the course of future developments. It is true, especially at times of crisis like the present, when new and incalculable forces are



coming into being, that catastrophic influences may emerge that will sweep aside existing tendencies and give a wholly new direction to education as to other national movements. While these considerations may well give pause to over-confident speculation, there is historic support for the view that characteristics once fairly established tend to persist through all changes of time and circumstance.

### *State Control*

The dominant note in the whole national life of the period is that of state control. The function of the state was for centuries regarded as being limited to purposes of defence and the administration of justice. The growing complexities of modern life have compelled state interference in an ever-widening circle of activities. In particular the rise of democracy made it necessary for the State to intervene in order to ensure that the mass of the people were educated to an extent sufficient to enable them to exercise the franchise with some degree of knowledge and intelligence. The first steps in this direction were hesitating and tentative, and had regard solely to the merest elements of knowledge. But control tends to grow by its own momentum, and so province after province has come under state review. Thus the State has extended its influence over the whole secondary school system. Central institutions, like the technical colleges, and the schools of art and domestic science, are now directed and controlled almost entirely by the State. The

universities still preserve their autonomy, but perhaps, as the late Professor Laurie feared, theirs is the fate reserved by Polyphemus for Odysseus, to be eaten last. In recent years, two new forces have arisen tending to quicken the national conscience to the need for a still greater measure of state control.

In the first place the decline in our leading industries and the advance in those of our trade rivals touched the nation on its most sensitive side, its material prosperity. Commissions and committees were appointed to investigate the situation, and all reported that our failure was due to deficiencies in our national education, and to the lack of organised effort and systematic methods in our commerce and industry. The new Education Acts for England and Scotland, with their provision for an extension of the compulsory age for day school attendance, and of compulsion for part-time education up to the age of 18, may be regarded as the State's acknowledgment of the validity of the charges brought against the existing system.

In the second place there is evident everywhere a growing sensitiveness to our social obligations. We are recognising more and more that we are members one of another, that we cannot live to ourselves alone, and that the State exists, or should exist, to make life richer, fuller, better for all its members. The introduction of medical inspection and treatment, the feeding and clothing of necessitous children, the restrictions of the hours of labour for all young people, are all concessions to this new spirit of social solidarity.

It is interesting to note that side by side with

the movement for increased state control there has grown up another demanding a greater measure of freedom in the schools—freedom for the teacher to teach, and freedom for the pupil to realise his own potentialities, and to express his own individuality. With the movement as thus described there is much sympathy among all true friends of education, and it should be one of the problems of the immediate future to arrive at a reasonable compromise between the conflicting claims of authority and liberty. With the extreme partisans of this movement, however, no compromise is possible. They declare that all authority must be abolished, because authority is the negation of liberty. They would banish all forms of compulsion from education, and they demand for the child absolute freedom to develop on all the planes of his being without let or hindrance from any one. This form of pedagogic Bolshevism has not many supporters, but, such as they are, they are sincere, fanatic, single-minded, and therefore to be reckoned with. In addition they reflect a current phase of political thought, and a current practice in industrial combination.

### *The New Humanism*

The increasing sensitiveness to our social obligations and social relations, to which reference has already been made, finds further expression in the growth of what, for lack of a more suitable term, may be called humanitarianism in education. This is manifested mainly in two directions—the increasing

attention bestowed upon the education of children mentally and physically defective, and the milder and healthier character of school discipline.

The necessity of dealing on a systematic basis with all abnormal children was first recognised in the Education Act of 1908. Local authorities were made responsible for their education and for their oversight and training up to an age when they should be able to earn their own living. This work was entered upon with great earnestness, and no part of the duties of school boards has been carried out with more efficiency and thoroughness.

As regards school discipline, it is not too much to say that something like a revolution has been effected in its methods during the period under review. The traditional hostility between teachers and pupils has largely disappeared. To-day, for the most part, mutual confidence and trust have taken its place. Corporal punishment has not yet entirely disappeared, but its exercise is regarded, like war, as a failure in diplomacy, and it is to be employed only as a last resort. Pupils, at least the younger pupils, can hardly be kept away from school. Terror and fear have gone out at one school door, and love and trust have come in at the other. After all, the idea of love reigning and ruling in school is no new thing. It was the basis of all Pestalozzi's theory, and an all-pervading atmosphere of affection surrounded him, his pupils, and his work.

There is general agreement that the aim of school discipline should be to secure the conditions necessary for carrying on efficiently the work of instruction,

and to exercise the pupils in habits of self-control and self-direction. For this purpose they must have opportunity for "the practice of choice." They must not be continually under authority, but should be entrusted with some measure of self-direction and self-government in order to develop a sense of responsibility and of obligation. Many experiments of this kind are at present proceeding in America. Some of these have passed the experimental stage and prove that, given the right type of teachers, it is possible to conduct schools efficiently on the principle of self-government. Mr. Homer Lane in England has achieved remarkable success in the same direction while dealing with the most refractory and unpromising material.

In Scotland this movement has made but little progress. This may be due to our traditional conservatism, or to our proverbial "canniness" which makes us seek out the golden mean. Or it may be that the Scottish child is slow in his rate of development and possessed of less than average initiative in the early stages. Scottish teachers are not unimpressed by these experiments in self-government, but they shrink from placing on pupils' responsibilities beyond what seems suited to their years, burdens greater than they should be called upon to bear. They are therefore rather seeking to evolve a practice of school discipline which, while upholding authority, will mitigate its exercise by various forms of devolution. This feature is specially characteristic of secondary schools, in which since the introduction of school games the character of the discipline has radically changed for the better. This is a debt, a

great one, that we owe to the English public school system. That system has come in for much criticism and censure, but on the disciplinary side at least it has many lessons to teach the world. Even primary schools have much to learn from it, especially in regard to the introduction of games and the cultivation of a corporate spirit.

### *The Course of Study*

On no subject is educational opinion more divided than on the nature of the course of study. Vital questions like the value of general and of specific education, of formal and of utility training, of practical and of theoretical instruction are still in dispute, and until they are settled, all forecasts as to the curriculum of the future are illusory. There are, however, certain points on which opinion is consolidating, and these may now be noted.

The enrichment that has marked the curriculum in recent years has inevitably led to a certain measure of over-pressure and cramming. For this it is difficult to find relief by cutting out any of the established subjects as they are admittedly all highly desirable, if not altogether indispensable. It is probable that a way out will eventually be found by *synthesising* and *simplifying* the curriculum.

By *synthesising* the course of study is meant having greater regard to the organic unity of all the subjects of knowledge, and utilising in our instruction their resemblances and relations to a much greater extent than we do at present. The Education

Department preaches this doctrine in its Codes and Memoranda, but inspectors and teachers pay too little heed to it in their practice.

By simplification is meant the rejection from the subject matter of all material that is merely traditional and non-essential. Education constantly tends to revert to scholasticism, and subjects gather up a vast mass of "lumber" that assumes a sacrosanct character and is taught without reflection generation after generation. In the United States a Commission has been at work for some years overhauling the syllabus of instruction in every subject in order to determine what parts of it can without educational loss be rejected. The Russell Sage Foundation, a wealthy trust for the promotion of educational research, has been investigating the same subject, more especially in order to see how much of the subject matter has a real bearing on practical life. For this purpose it invited eleven of the leading citizens in Springfield, Ill., to submit themselves to an examination in spelling, arithmetic, history, and geography, as prescribed for pupils in the higher classes of the elementary school. Among those who accepted the invitation were a banker, a physician, a lawyer, a clergyman, a newspaper editor, a merchant, and a military officer. The results of the examination showed that not a single candidate reached the pass standard in any subject! Scotland is only learning to make educational experiments, but if the same one were tried here, the results would, we fear, show a similar divorce between the requirements of school and those of life.

The introduction of practical subjects is in accordance both with common sense and with psychological principle, but we need much more of this form of training if our education is to make its full appeal to the pupil. There are whole classes of young people and of adults who imbibe knowledge, so to speak, through their finger-tips instead of through their brain. They are not necessarily of less capacity than their neighbours. They are simply differently constituted. The school has made no more serious mistake than in seeking to apply a single formula---that derived from brain power, or even from bookishness---to all sorts and conditions of pupils. But further, this form of training would, in its place and due extent, be of value for every one, as success in almost every sphere of life depends on exact observation and executive skill, and practical work affords the best training-ground for these qualities.

#### *Child Study*

One of the most hopeful signs in present-day education is the increasing attention being given to the child. The centre of gravity in the school is fast removing from the curriculum, the subject of knowledge, to the child, the subject of training. This is no doubt partly due to the increasing prominence given to the more humane side of school life already referred to, but it is also owing to the recognition for the first time of the place of psychology in the sphere of education. As the science which claims to formulate the ascertained facts in regard to the working of the mind, it is remarkable that its aid



has not long ere this been utilised for educational service. In this, however, education has been no more remiss than the other social sciences, all which have psychology for their basis. To-day, fortunately, the world is agreed that some knowledge of the child mind and its modes of operation forms an essential part of the teacher's equipment. The elder Mill declared nearly a hundred years ago, with a prescience far beyond any of his contemporaries: "Education cannot assume its most perfect form till the science of mind has reached its highest possible development." That day is still far off, but many investigators are working towards it in different countries. In this field, Scotland lags far behind. Neither in the universities nor in the training colleges are there to be found departments of educational research in any way comparable to those in England, Germany, and the United States. Nor do child study associations appeal to the great mass of the teachers as they do in those countries. It is true that the genius of the nation has always exercised itself along the line of practical and empirical action, but it is a serious outlook for our national education if we are always to live a parasitical educational life, dependent upon the researches and investigations of others.

### *Examinations*

The movement towards securing greater liberty for the teacher by freeing schools from the incubus of external examinations has made remarkable progress in recent years. So far as the primary schools

are concerned, there is general agreement that the only examinations which should be tolerated are those which form an integral part of the education of the child. Such examinations are those which are constantly being held by teachers to determine whether the instruction has been assimilated and whether the pupil is ready for a new forward step. In Scotland this stage has almost been reached, and the only external examination now remaining in the primary school is the qualifying examination. No one can claim for it a place in the education of the child. It is an efficiency bar set up by the Treasury, and admittedly has no educational *raison d'être*. With the institution of the new financial measures outlined in the Education Act, it may safely be assumed that the qualifying examination will disappear, and promotion at this stage, as at all others, will be dependent on the teachers' judgment.

Since the introduction of the leaving certificate examination, and its acceptance in whole or part by so many other examining bodies in lieu of their own examinations, Scottish secondary schools cannot be said to suffer from an excess, at any rate in number, of external examinations. The increasing importance attached in these examinations to the teachers' assessment of the attainments of the pupils removes from it the worst features of external examinations. At the present moment proposals are under consideration for removing the last vestiges of externality from the award of leaving certificates. The precise form of the new proposals has not yet been disclosed, but there is good reason for believing it may include

the disappearance of the uniform written examination and its replacement by inspectoral tests, supplemented by the teachers' judgment on the attainments of pupils as already in operation in the case of science and drawing.

It is interesting to note that in America a movement in precisely the opposite direction has arisen in the Eastern States. There each school was in the habit of awarding its own leaving certificates, but there was found to be such amazing divergence of standards in the respective schools that a demand arose for establishing some responsible authority to give unity of standard and aims to the examinations. In response to this demand, examining boards have been set up in the leading States, on which are representatives of the universities, colleges, and high schools. These boards are making every effort to conduct their examinations on a rational, systematic basis, and with due regard to the individuality of teachers and schools. Before entirely forsaking a system which has rendered such conspicuous service to secondary education in Scotland, the Department should endeavour to find some *via media* between absolute uniformity of examination and the possible anarchy of a "go as you please" system.

#### CONDITIONS OF ADVANCE

##### *Supply of Teachers*

Favourable as are the main tendencies in our educational system, they are not absolute and unconditioned. They require favouring circumstances,

and a free field in order that promise may pass into fulfilment. Of these the most essential is the supply of a sufficient number of men and women of the type best fitted to train character and develop thought. This condition is fundamental. The teacher is the pivot upon which the whole educational system moves. A failure here as regards quality or quantity would paralyse all advance and frustrate the brightest hopes. How then does the position in this connection stand? Both in Scotland and in England there is clear evidence of a growing disinclination of boys, and to a less extent of girls, to enter the teaching profession. More serious still is the fact, according to the training college authorities, that the quality of the new recruits is steadily declining. Even before the War this question was beginning to arouse concern. The War and war conditions have rendered the position much more critical, especially as regards men. Of those who left the profession for war service many, alas, have passed whence there is no returning, whilst others have heard the siren call of more attractive pursuits, and are equally lost to the profession. But that is not all. Hitherto the State could count upon a fairly steady stream of women recruits. This source can no longer be relied upon to make good even the normal wastage of ordinary years, still less to make up the deficiency due to war. Many new and profitable occupations for women have opened up owing to the displacement of labour occasioned by the War, and from these education in its search for recruits must in the future look for strong and effective competition. But we have not

merely to bring the numbers up to the old level, we must besides provide a greatly increased supply, if we are to carry through those reforms that by common consent are vital to national welfare, and even to national existence. The extension of the school age, the institution of a compulsory system of continuation education, the long promised and long overdue reduction in the size of classes are all contingent upon securing a material increase in the teaching supply. The question is whether this increase can be obtained in view of the adverse facts already referred to. Teachers are agreed that the necessary numbers can be had, but only on terms.

The first is that the conditions of service be made more tolerable for men of independent spirit, and more attractive to men of first-rate ability. The educator must be granted the freedom accorded to other professional men within the sphere of their special duties. He must be released from conventional restraints, and be at liberty to express his individuality in the ideals and methods of his school. In short the teacher must be trusted, and he must receive the official consideration due to his professional standing and the importance of his service. The State, too, must set its seal upon the teacher's work by bestowing the same public recognition and rewards as are granted to the other learned professions.

The second condition is that the scales of salaries be materially improved. They must be commensurate with the difficulty, delicacy, and value of the work, and have regard to the conditions existing in

other professions. In England people are more alive to the critical situation simply because it has been longer in evidence there. They are seeking a way out, but they are looking in the wrong direction. In London an attempt is being made to entice young people into the profession by a system of doles and bribes at the outset. Other authorities are offering bursaries to pupils at eleven years of age provided they bind themselves to become teachers. This is indentured labour of a particularly vicious sort. Other schemes are under consideration which are equally subversive of educational principles and individual liberties, and equally pernicious as expedients for attracting the right type of entrant. In Scotland matters have not yet come to this pass, but the latest returns from the training centres are ominous. Take Glasgow as illustration :

In 1908-9	there were	1293	students in training.
In 1917-18	„ „	745	„ „
In 1918-19	there are	678	„ „

Only immediate and radical action will prevent a grave breakdown in the educational service. The status of teaching must be raised all along the line.

#### *Size of Classes*

Another vital condition of advance is a reduction in the size of classes. Education is essentially an individual matter. Under present conditions the gross fact of numbers overwhelms the teacher and swamps the individual. If a teacher has 60 pupils to look after from nine o'clock to four every day, she

can have neither the energy nor the inclination to attend to individual characteristics and needs. She teaches up to a phantom called "the average child." Psychology declares with Betsey Prig, "I don't believe there's no sich a person." Children instead of conforming to a rigid pattern are all infinitely different. Psychology is emphatic on this point. So, too, is the parent, even without psychology, for he finds each new child a new problem. The large class "steam-rolls" differences and inequalities for the moment, but diversity of capacity, aptitude, temperament, character is not thus eradicated. There they are, and there they will remain, and it is our business to reckon with them and give them due scope. Democracy is inclined to resent this inequality and to shut its eyes to it. But democracy cannot wipe out distinctions laid down in the primordial cells. It cannot "equalise the unequal." Education, true education, tends to emphasise differences. Equality can exist, if at all, only in an uneducated community. But if no system of education can secure equality of capacity or product, it can and should afford equality of opportunity so that each child may have full play for self-realisation and self-expression. This can be secured only by the educator being placed in a position where observation of individual tendencies, aptitude, and needs is possible.

The Education Department has given proof of its belief in smaller classes by making the unit for class management 30 in secondary schools. It has also sought to bring about a reduction in the unit for primary schools, but has meantime failed owing to

the opposition of certain school boards and voluntary managers. The existing difference in favour of secondary pupils is, if anything, in the wrong direction. If there must be differentiation, it should rather be in favour of the younger pupils who most need help.\*

The question of what constitutes the ideal number for class management is still in dispute. Some authorities have declared that no class should exceed 25. The King Alfred School Society has decided for 15, and applies this principle in all its schools. In Scotland teachers are meanwhile prepared to accept 30 as the working unit for all schools, but they recognise that this can be secured only by gradual steps in view of considerations of accommodation and staff.

#### *Co-operation of Parents and Pupils*

Finally, in order to obtain the best results from our educational system we require to have to a much greater extent than hitherto (1) the co-operation of the parents, and (2) the more conscious and hearty co-operation of the pupils themselves in the work of instruction.

1. The late Bishop Creighton declared that the only purpose the parent served in the educational system was to be available for prosecution when his child did not attend school. The compulsory character of the educational provisions tended to develop a feeling of hostility between teachers and certain classes of parents. "It would be easy to



*educate children were it not for their parents,"* is a caustic remark ascribed to some teacher. There is unfortunately much truth in these words, and there is grave educational loss from the fact. Until these two vital factors in child welfare are brought into harmony and active co-operation, there is no possibility of exploring the full potentialities of education.

It was for this reason that teachers in Scotland welcomed the clause in the first draft of the new Education Act providing for the formation of committees of parents and teachers in connection with each school. It is unfortunate that this clause disappeared from the measure in its final form, but it is still possible to bring teachers and parents together by voluntary co-operation. The United States have set a splendid example in this direction, and teachers testify to the value of this new educational asset. The gulf between parent and teacher is rapidly being bridged, and a powerful sentiment is being created in the home in favour of supporting all the efforts of the school. When this sentiment has become a tradition, it should prove a factor of immense value for educational advance.

2. If we are to believe Plato and Aristotle, an educational system is good or bad according as those trained under it do or do not feel pleasure and pain at the right things—*χαίρειν τε καὶ λυπεῖσθαι οὓς δεῖ*. It is to be feared that measured by this criterion our system must stand partly condemned. A large number of our senior pupils, especially the

boys, do not take pleasure in knowledge nor are they shocked at ignorance. Their attitude towards education is too often that either of indifference or hostility. It has almost passed into a proverb that "boys dislike knowledge for its own sake." Mr. Dooley, that keen observer of human nature, sums up the schoolboy attitude in the words: "It does not matter what you study, so long as you hate it."

What is the cause and the meaning of this attitude? It is not universal, but seems peculiar to Britain, and more especially to the large cities. In the rural districts the old *perfidum ingenium* still persists. It is not characteristic even of our town boys in their earlier years. They begin their course with keen interest and lively curiosity. Then shades of the prison-house seem gradually to close upon the growing boy.

There is no doubt that one of the reasons is the existence in at least certain of our schools of a tradition against learning. It is regarded as bad form to show an interest in one's studies, and to be termed a "stew" or a "grind" is, according to school ethics, a grave reproach. The way out lies in creating a tradition in favour of a reasonable degree of application. The tradition in favour of fairplay has had a great influence not only on school but on national life. Is it not possible by united effort to secure an equally strong sentiment in favour of a fair amount of work? No one desires to see the repression of the fine spirit of freedom and spontaneity that marks our older boys. No one wishes to see the school bulk so large in the eyes of

parent and pupil that a reproof from the teacher casts a shadow over the home, as is common in France and Germany. All that is asked for is a modicum of genuine application and individual effort.

To this end parent and teacher must co-operate. The parent must show the interest and the belief in education which are necessary to commend it to his children. The teacher must revise the curriculum and purge it of the excessive bookishness that at present marks it. He must also revise his methods in the light of Rousseau's generalisation: "*Toute la méthode est bonne excepté l'ennuyeuse.*" Finally, he must convince his pupil that education has a definite tangible value for him, and that it is worth while putting forth an effort to secure it.

While these and other considerations render the educational outlook not without anxiety, there is happily abundance of signs and portents that make "for hope and forward looking thoughts." The fiery furnace of war has tried everything whether it be silver or gold or hay or stubble. Many things once in high repute have failed to stand the test, but education has emerged renewed in strength and spirit, and has advanced to a first place in the scale of national values. Even "the man in the street" has come to believe in the value of education. Our soldiers at home and at the front exhibit an insatiable craving for books, for classes, and for instruction generally. The opinion of the best elements in the industrial world gives proof of the profound faith of democracy in the uplifting and ennobling power of

education. Finally, even amidst the tremendous responsibilities and distractions of war, the State has found time to prepare for schemes of peaceful reconstruction, and among these education has received a foremost place. The Secretary for Scotland declared some time ago that "Education is the vital problem of reconstruction," and in his great Education Act he has given ample proof of the reality of his faith. Its provisions are bound to modify profoundly our whole social and industrial life, and their acceptance, as in the case of the similar measure for England, not only without serious protest, but with positive gratitude in many quarters, has been rendered possible chiefly through the experience and discipline of the War. If war is a stern schoolmaster, exacting its fees in blood and tears at any rate its lessons are so deeply imprinted as to remain imperishable.

Is it then altogether chimerical to entertain the hope expressed by Jowett in expounding Plato's metaphor of "Education as a wheel"? Set agoing in the right direction, and guided by the right hands, education will travel with ever increasing velocity, not with an arithmetical but with a geometrical ratio of increase. "If this be indeed so, who can estimate its momentum when it has been freed from the trammels of prejudice and superstition, when it has become universal, when it has been extended to the confines of manhood, and when it has been inherited by successive generations of men?"

## PHYSICAL INTERESTS

1. *The Hellenic Ideal*

PHYSICAL Education is a mental process. That is a primary proposition. It was more or less understood in the ancient world ; for we know that Plato looked on good physical form as the basis of good character and developed will. In the schools of Hellas physical education took a high, almost the highest, place ; but it is not clear whether physical education was thought of mainly as a preparation for war or as a factor in the development of personality for its own sake. It is certain that, as to-day, the athlete had more than his share of public applause, and athleticism in the specialised sense was a widespread ideal. It is equally certain, however, that the specialised athletes, however much they drew the appreciation of the multitude, tended, in their daily habits, to overemphasis of the merely physical and the brutal. This, of course, was not universal ; for a feature of the Hellenic schools was the variety in physical training, the care taken to produce a healthy and virile body, the definite application of physical methods to the elimination of deformity and the production of efficiency and beauty. None the less,

reparation for war was never absent from the Hellenic mind. It is true that in Athens the training of the body was almost as varied as the training of the quick Athenian mind, and, although the gymnasia were devoted mainly to the training of the body, they were also schools of the intellect; for in the undressing room the sophists waited and taught. Probably, therefore, the education for action and the education for thought were never dissociated either in theory or in practice. But in Sparta the military abstraction seems to have dominated the schools; for there the purport of training was to fit for war alone. But nemesis was not asleep, and of Sparta it is said that: "There was no individual education for the boys. The hardships were excessive and brutalising. While the boys' bodies were developed and trained almost to perfection, their minds were almost entirely neglected: hence the stupidities of Spartan policy and the lack of imagination which their statesmen showed" (Freeman, *Schools of Hellas*, p. 33). But, however we qualify the facts, the Greeks had seized the primary proposition that physical education is an essential factor in all education, whether we think of education as a discipline for a special purpose or as a discipline for life as a whole.

But two things forbid us to take any Greek system of physical education as a model for the modern world; first, the life was conditioned by the eastern Mediterranean climate; second, the leisure of the educated classes rested on slave labour. But if the systems of physical education differ, the principles are the same whether we have to apply them under

the hot sun of the Mediterranean vinelands, where the slaves bore the burden and heat of the day, or in the colder inconstancies of these islands, where slavery has passed into industrial wagedom with problems, perhaps, of even greater gravity. If it may truly be said that the leisured life of Hellas gave us great masterpieces in literature, art, education, and statesmanship, it may equally be said that the Mediterranean civilisation as a whole, notably in its Roman development, sank to a certain extent under the crude ideals of force. The day's life possible in a little country where the sun was generous, where old men and children could keep the flocks or guard the vines, where the infinitely varied coast line tempted the young men to the sea, so securing relations with all the available world, was no longer possible when the hordes of east, west, north and south came successively under a single political system. War compelled the Romans to specialise in the preparation of strong and enduring soldiers. Physical education had to predominate; but in that predominance the true lesson of Hellas was largely lost. It would be interesting to trace through the civilisation of a thousand and more years how personality, a unity with physical and mental aspects—the conception of Aristotle—passed into the crude dualism of mind and body conceived vaguely as a material ghost within a more material casing, and how the ancient unity has come slowly into its own again, until in the twentieth century we are able once more to assert that education must take account not of mind *and* body, but of the total personality realised as physical and mental.

## 2. *The Modern View of Physical Education*

In this broad sense, physical education in the modern world is new. It is understood that education, mental and physical, must be conceived as one system. Every voluntary movement is a mental action. Every thought has its physiological concomitant. The training of the muscles is in essence as much a mental process as the training of the intellect or the will. Whatever our ultimate meta-physical formula may be, it is important to assert that for education the mental and physical organism is a unity. It is always a living person we have to educate. If he would meet the illimitably various demands of life, he has to be sound in all his organs; to be sensitive, yet enduring; to be adaptive, yet reactive; to be supple, yet strong; to be alert in action; to be capable of acting without hesitation on a given emergency; in a crisis to be able to mobilise his whole strength without conflict of motive or failure of control. From this ideal the Greeks were not far off. They tried to tune the human organism to its highest expression in thought and in action. Within this ideal, potent now as then, physical education is only a factor, but a factor that steadily gains in importance as the modern life of work grows in intricacy.

## 3. *The Genesis of Medical Inspection*

To-day the problems of physical education are more urgent than ever. Never, even in the ages of morbid asceticism, has the need for the care of the body



been forgotten ; but from Locke onwards, educational theorists have pressed the importance of systematic care of the whole physical organism. This was easy while education was still confined to a relatively leisured class. So long as the worker worked, his education, physical or mental, seemed a secondary matter. But the rude shock of the Boer War in 1899 opened the eyes of the British people. Where to-day we demand millions of fit men, in 1899 we asked only for thousands. Yet the recruiting offices of 1899 revealed to the uninformed the need for a radical investigation of the whole physical life of our people and primarily of our children. It is not often that we can give a date to the beginning of a great movement ; but the conscious and systematic survey of the physical life of our people had its inception in or about the year 1902 ; for it was then that the British Government decided to appoint the Royal Commission on Physical Training in Scotland. How crude the prevalent conception of the problem was may be gathered from the terms of reference :

“To inquire into the opportunities for physical training now available in the State-aided schools and other educational institutions of Scotland ; and to suggest means by which such training may be made to conduce to the welfare of the pupils ; and further, how such opportunities may be increased by Continuation Classes and otherwise, so as to develop in their practical application to the requirements of life, the faculties of those who have

left the day-schools, and thus to contribute towards the sources of national strength."

The Commissioners discovered many opinions, but few facts. They were obliged to order a special investigation of Scottish school children. The results were disquieting. The primary result of the Commission's investigations was a series of recommendations, leading not to the extension of physical training in the schools, at any rate immediately, but to the medical inspection of school children, as a preliminary to reasoned treatment of the whole subject. Unlike most other public services, medical inspection may be said to have sprung full grown from the head of the State. Yet it was not till other five years had elapsed that it found a place in the law of the land. The Education (Scotland) Act, 1908, introduced it into practice in Scotland. England had anticipated this by a year. Since that time many millions of children have passed through a medical examination, and millions of parents have been made conscious of the need for a closer superintendence of physical life in the home. Physical education, thus re-started on a basis of careful medical inspection and treatment, has been rapidly developed into a system that now touches every phase of life in the home, in the school, in the adolescent occupations, in the adult occupations. What the Boer War started, the Great War continued. In the new English Education Act, as in the new Scottish Act, the education authority is placed under an obligation stronger than ever to provide for the treatment of disease and the maintenance of health.

If there is one truth to-day that needs no argument even among the most backward administrations, it is the truth that our national welfare hangs by our methods of securing health and strength to the personal units of the nation. The mass of problems thus forced upon us it is impossible here even to indicate ; but, for the study of the limited problems of physical education within the conditions of school life, the raw material keeps flowing in from many sources—the medical inspections, the school clinics, the special schools for physical defectives, special schools for mental defectives, feeding centres, the colleges of hygiene and physical training and many minor sources.

#### *4. Preparation for Physical Education*

It is not easy to convey any general impression of the extent, or the subtlety, or the variety of the systems of physical education now finding their way into the schools. Systems, I say advisedly ; for, in spite of innumerable discussions of theory and re-assertions of fundamental physiological ideas, the systems have not yet grown into system. There is nothing final anywhere. In the widest sense, the whole group of ideas vaguely suggested by the term “ physical education ” has not yet emerged from the stage of experiment. But, perhaps, first it may be well to consider a little more in detail by what methods the children of our schools are selected and prepared for their physical education. Then we shall better understand the genesis of the model courses and the need for the colleges of hygiene.

The Scottish Commission on Physical Training accepted the view that the large number of serious and minor diseases directly and indirectly affecting physical efficiency and mental efficiency constituted an overwhelming case for a medical inspection of school children ; that the very limited facts obtained from the special examination of twelve hundred Scottish school children were enough to prove that a primary condition of any good result from increased physical training was adequate food and clothing ; that no systematic exercise ought to be practised or enforced without a preliminary medical examination of the vital organs to ensure that irreparable damage should not result ; that exercises should be organised strictly in accordance with individual health, physical development, and vigour.

5. *The Development of Physical Education in England*

To those conclusions, resting on all too narrow a basis of facts, ten years' medical examinations through England and Scotland have come as a continuous verification. But the purpose of those examinations is not alone to provide verifications of theorems, but primarily to secure remedial treatment. The administrations have not stood still. If we scrutinise the fine series of annual reports issued from 1908 to 1918 by Sir George Newman, M.D., K.C.B., Medical Officer of the Board of Education, we shall readily discover how a system of physical training must be grounded in a careful scrutiny of the individual children, how from the general provision of wholesome conditions of living the system must proceed, step by

step, to applications more and more specialised, until, at last, every individual child within the school period finds provided for him the services necessary to his best growth and development. This ideal can never be realised completely ; it must be enough for the present to indicate by how many paths it is now systematically pursued.

In the early reports much argument is spent in pressing home the organisation of a school medical service. It is found necessary to insist that all children, not merely defective children, must be inspected. Then follow brief tables of the multitudes of defects found, arguments to show the need for medical treatment, sketches of administrative methods to help the more backward authorities, and, generally, surveys of the many local efforts to meet the problems revealed. At the beginning, strongest emphasis is laid on the need for cleanliness, the extirpation of vermin, the relation of house to school, the establishing of *rapport* between teacher and parent. But as year succeeds year, we discover the growing importance of " following up." Then there are arguments to prove the necessity of medical treatment. Medical treatment realises itself through school clinics and the use of hospitals. The school nurse appears. Clinics grow in specialism ; there are inspection clinics and treatment clinics ; there are eye clinics, ear clinics, dental clinics, skin clinics. Year by year the reports insist on better feeding as the basis of better education. There are feeding centres, large cooking installations for the feeding of thousands of city children every day. Meanwhile, the open-air school has been growing in

favour. By 1911 open-air education demands and receives a section for itself. Meanwhile, too, the continued revelations of medical inspection prove the necessity for training the teachers in personal hygiene. Special courses, both in physical education and in personal hygiene, are provided at the teachers' training centres. By 1913, partly through the school revelations, partly through the multifarious activities of workers among children of the pre-school ages, all the problems centring round the mother and child had been fermenting in the social consciousness, and now claimed their place in the educational system. Out of this ferment of ideas nursery schools and schools for mothers have emerged spontaneously. From the millions of children examined in the ordinary day schools, it came clearly forth that the pre-school life could no longer be left to organised or unorganised charity or to the waxing and waning of social enthusiasms. By 1914 the public mind had been prepared by a thousand influences for the enormous expansions implied in the "child welfare movement." The consciousness so stirred became more vivid as the drain of war grew greater. By 1918 these reports prove that what, ten years ago, had begun as propaganda, has ended in accepted social organisation. The period of persuasion is ended; the period of direction is begun.

The following figures show the large expansions of the system of medical inspection. In the year 1913-14 the number of children in average attendance at public elementary schools in England and Wales was 5,381,479. According

to Sir George Newman's report for the year 1914, "in London alone, upwards of 294,000 children were examined in 1914; 101,000 were found to be in need of treatment, and 86,000 received treatment." The available returns did not make it possible to state accurately the numbers for England generally; but "it may be taken that the School Medical Service under the Local Education Authorities is now handling about 1,900,000 children per annum, yielding 650,000 defects, of which 375,000 actually receive treatment. In some areas a quarter, in others a half, and in yet others 80 per cent of the defective children are being treated." The report for 1917 contains a review of the work of ten years 1908 to 1917. It is stated that the school medical service is now at work in all the 318 educational areas of England and Wales, in all the 21,000 public elementary schools, and in many of the secondary, preparatory, and public schools. In 1915 there were 855 school medical officers and assistant medical officers engaged in the routine work of inspection and treatment, and 445 medical officers employed on work of a specialist character (ophthalmic, aural, dental, etc.)—1300 medical men in all. In 1917 there were 200 school dentists at work in 300 school dental clinics. In 1915 there were 1500 school nurses employed in 291 of the educational areas. There were 512 school clinics. Local education authorities to the number of 223

had made provision for supplying spectacles. About 60 per cent of the children found on medical inspection to be defective are now receiving treatment. In London alone 164,500 children per annum are treated. The practice of physical training and the teaching of hygiene have, since 1909, been universal in all training colleges and every educational area in England and Wales. Of special schools, for blind, deaf, physically and mentally defective, epileptic, and tubercular children, there were in 1917, 413, accommodating 31,470 children. For the year 1916-17 the total expenditure on medical inspection and medical treatment in England and Wales was £417,805. This sum includes salaries of medical officers, salaries of nurses, travelling expenses, drugs, materials and apparatus, spectacles, contributions to hospitals, infirmaries, nursing associations, etc., provision of clerical assistance, premises, etc. In a general review of the ten years, Sir George Newman shows how the school medical service has developed into an effective section of preventive medicine.

#### 6. *The Development of Physical Education in Scotland*

The work here sketched for England has had its parallel in Scotland. The impulse of the Scottish Commission affected both countries. But in Scotland the evolution of methods has followed a line of its own. From the beginning medical inspection of



school children was conceived as a part of public health administration. This principle guided the Scotch Education Department in the organisation of schemes. Accidents of administrative growth made it impossible to apply the principle universally ; but in most of the counties the system of medical inspection forms a really operative part of general health administration, and in the cities the co-operation between the health authority and the education authority is of the closest. The school authorities have, it is true, their special problems of individual health ; but the health authorities are also specialising their health functions in every direction. In a short time a new synthesis will occur ; the medical functions of health authority, school authority, parochial authority, insurance authority, pensions authority, and others have become so closely interrelated as to demand, in the interest of economy and efficiency, a further elaboration into a single system with specialised departments. This process of organisation has already begun and must continue. The present systems of medical administration must, therefore, be regarded only as transient and provisional.

But in the ten years since the education authorities were empowered or required to provide medical examination of children, the school medical service has shown what the practical necessities of school life are. Medical inspection has been rapidly followed by medical treatment. But, as an immediate result, of the Royal Commission's report, it was seen that, to make medical inspection effective, it was necessary to establish courses of physical education for teachers.

At all the training centres in Scotland qualified medical men or medical women conduct the teaching of personal hygiene, and in some of the colleges they also superintend the physical education of the students in training. At the training centres, therefore, the curriculum includes both the physical education of the student and his instruction in the hygienics of school life. In 1907 the Scotch Education Department issued a memorandum justifying the principles of this new departure. It was there pointed out that military drill must give place to physiological exercise; that this, in turn, must form the basis of the hygienic exercise, preventive or curative; that the hygienic exercise, in turn, demands medical supervision; that medical supervision cannot bear its full fruit without the education of the teacher, who ought to be able to prescribe not merely the child's intellectual lesson, but also his physical lesson; that, consequently, the teacher must have training in the general physiology of bodily exercise, and, to a certain extent, in the recognition and management of defects and diseases. The teaching of personal hygiene on these lines merges into medical supervision and must take its direction from a trained medical officer. "A system of physical training, too, may, through large sections of it, be effectively taught by skilled laymen, and has been so taught effectively; but at every stage of a child's school course his physical training is conditioned by medical considerations, and cannot safely be conducted without medical supervision. These facts should be frankly recognised. They justify and require that, for the training of teachers, the course in the Hygiene of

School Life shall include systematic discipline in the *principles* of Physical Training, given under the direction of expert medical opinion, and *Practical* Physical Training of the individual Teacher conducted in intimate touch with his education in Personal Hygiene." The medical teaching at the training centres is the correlate of the medical inspection and treatment at the schools. Every teacher thus learns from personal training that physical education is an essential part of personal hygiene.

Did space permit, it would be interesting to describe the elements of this teacher's course, and, in particular, how the theoretical studies of the first year are continued into practice in the second year when the students take their part in the teaching work of the schools.

But the application of medicine to school practice did not stop at this point. There were the special colleges of physical training to consider. From these come the expert superintendents of physical education. It was found that, however well organised those colleges might be, they really demanded some form of medical supervision. In many of the colleges of physical training all the work is done by persons, who have been fully trained, under one system or another. But in Scotland it was early felt that, to achieve the best results, the training of the specialised teachers or superintendents of physical education should also be under medical direction. After many careful experiments and investigations the Carnegie Dunfermline Trust decided to place its college of hygiene under the principalship of a

qualified medical man. The Trust also decided to appoint an adequate medical staff to teach anatomy, physiology, and personal and school hygiene. At this college, therefore, the technical training of the teachers or superintendents of physical education is, from start to finish, conducted under full medical direction, with the assistance of lay persons trained in the latest and best methods of physical training.

Thus in Scotland the system of medical inspection and treatment at the schools or in school clinics is supplemented by medical teaching at the training centres and specialised medical teaching for the superintendents of physical education. At no point are the medical needs either of the teachers in training or of the pupils in the schools forgotten.

The practical working of the elaborate medical system thus established is shown in the reports by Dr. Lewis D. Cruickshank, Medical Officer and Inspector of Physical Education under the Scotch Education Department. As in England, so in Scotland, the progress has been from the general provision for sanitation towards greater and greater specialisation. In the report for the year 1913 the chapters include a survey of the schemes of inspection, procedure of inspection, the physical condition of the school child as shown in his height, weight, general nutrition, personal cleanliness, vision, etc.; the following up of reported cases; the organisation and administration of clinics—the inspection clinic, the treatment clinic, the medical clinic, the ophthalmic clinic, the dental clinic, the operative clinic, the orthopædic clinic; special schools, including schools

for cripples, for blind, for deaf; day recovery open-air schools, residential recovery open-air schools, open-air schools for tuberculous children, residential sanatorium schools for tuberculous children, schools or classes for children suffering from chronic infectious diseases like ringworm and favus, schools for mentally defective children; physical education in all grades of school from the infant departments to the higher grade and secondary schools.

In the year 1913, the average number of children in attendance at the Scottish public schools was 839,049. Of these, 414,429 were medically examined. This is a sufficient indication of the work done by the school medical service of Scotland.

The materials summarised and judged in the reports by the central department are based on the specialised reports by the school medical officers. The school medical service has now, as the result of several years' experience, reached the point when this elaboration and specialisation are essential to clearheaded action. In the early days figures of height and weight were so tempting and so easily accumulated that officers tended to be "snowed under." That has been rectified. The schema of a school medical officer's report now includes all the essential data for an estimate of progress in administration, in individual health, and in individual physical education.

The study of this schema reveals how far the specialisation of administrative medicine has proceeded, yet how essential every item is if we are to lay the groundwork of successful physical education.

The tens of thousands of minor defects and ailments discovered at the inspections forbid us to assume that, without a careful individual scrutiny of the children, any system of physical training can do anything but harm. On the other hand, the organisation of inspection and treatment now makes it possible to educate each child physically in accord with his personal inheritance and personal powers. Medical superintendence and physical education are elements in a single system of ideas.

But medical inspection, medical treatment, and physical education at school can make only a fractional difference to the physique of the generation. Why is this so? Because the health of the school child depends, not on his day's work at school, but primarily on his environment at home. This brings us face to face with the problems of food, housing, wages, national and international trade, the biology and sociology of the family. As it takes the whole force of the ocean to "throw that faint thin line upon the shore," so it takes the whole force of social organisation to provide a fit environment for the child.

### *7. The Child Welfare Movement*

This is not the place to discuss further these larger issues; but it is right to note that, partly as the result of the scrutiny of school children, partly as the result of more extended social investigations, the nation has now clearly realised that, if the child is to come to school healthy, he must be tended from

birth to school, and if he is to be, in the biological sense, well born, he must be tended before birth. Here we reach the foundations of society. How vast the problem of the mother and the child everywhere is, it is impossible here so much as to suggest. All that can or need be said is that, in the developments now upon us, the continuity of the child's life from conception to adolescence is, at least in principle, accepted by the national administrations. This is the fundamental proposition of the child welfare movement.

The way is now clear for a discussion of physical education proper.

#### 8. *Aims and Methods of Physical Education*

It is the aim of physical education to secure to each individual his potential maximum of fitness at the various stages of his development. How difficult this is the preceding discussion shows. But, in the modern elaboration of physical methods, the many elements of the problem—the imperfections of the senses, the inequalities of cerebral and muscular development, deformities, defects and ailments congenital or acquired—are all fully allowed for. Relative health is presupposed; but methods of promoting health are now an integral part of the systems of physical training. It may even be said that the best methods of training have themselves been deliberately adapted as a whole to establish and maintain a healthy metabolism. Briefly, therefore, the aim of all physical education is, under the

general conception of growth, to secure the harmonious development and action of the whole organism. Behind this aim lies the deeper view that, where the organism is best developed, the intellect more easily attains to its greatest mastery, and the will to its highest potential. In the general result, too, a well ordered course of physical education tends to bring the action of the human form to a higher æsthetic level.

These are great claims; they need many qualifications; for nothing is more illusory than the belief in the allsufficiency of a system, whether it be a system of diet, or of exercise, or of education as a whole. The human mind goes on outliving all systems and recreating without end. Whatever claims any system of physical education makes must, therefore, be taken critically. Every system must be tested, re-tested, and adjusted to the endless variety of the individual life faced, with its individual problems all the way from infancy to age. The best system is only a rough, moving compromise; but, in the wear of life, the ethical value of health and strength cannot be questioned. This is all we need to justify our pressing for the most intimate attention to the physical interests of the organism through the whole period of its growth and activity.

The physical methods of securing these aims may be broadly classified under two heads: first, exercises to secure good posture; second, exercises to secure good carriage. If this were the proper place, it would be easy to select from a good text-book graduated



exercises adapted to secure both posture and carriage. But we must be satisfied with a general statement.

If you watch a skilled teacher handling a class of children aged eight or thereby, and record his directions for half an hour, you will find him following some such sequence as this: To begin with, he will, by a quiet order, "fall in" his squad in four lines. They now know that the work has begun. By one or two sharper commands, he stimulates the squad to a brisk march, developing certain simple evolutions, adjusting the distances between individuals, and securing individual positions for the further movements. The whole group is now on the alert. The pulses are faster; the respirations are deeper; the muscular tension is higher. Then he sets about correcting the postures. Here it is a head too far forward; there, a back too much bent; in another place, a slouching attitude. These he proceeds to correct—not by merely ordering the head to be held this way or that, but by a dynamic exercise to develop the muscles whose action will correct the bad posture. He will, for example, insist on a neck exercise, which involves the bending forward and backward of the head. He will, also, order an arm exercise where, with feet astride, the pupil swings the arms upwards and sideways. At each stage he requires correct adjustment, correct movement, correct attitude. Attitude, it is important to remember, is a temporary equilibrium, due to the contraction and counter-contraction of innumerable muscles. Attitude is not static; it is at every moment dynamic. Strictly

speaking, therefore, correction of attitude is correction of innumerable co-ordinated movements.

But, up to this point, the corrections are minor. The teacher now turns attention to the trunk. Here, too, the exercise must be corrective as well as developmental. For instance, he will require the pupil, with feet astride, to bend the trunk variously sideways. This type of exercise is repeated until two results are attained—correctness of attitude and sufficient repetition of muscular movement to generate a real organic memory. From this the teacher proceeds to something more stimulating—a vigorous game, a quick march round the playground, and then back to the individual training stance. Here is an occasion for training in carriage. Good carriage means graceful poise, which, in turn, means absence of irrelevant movements. To begin with, carriage has to be consciously intended; to end with, it is the graceful swing of the harmoniously trained body. But the teacher must go systematically forward. He next requires an abdominal exercise, where the pupils, feet astride, arms stretched upwards, make quick bending movements. Then he requires dorsal exercises, such as lifting the arms slowly sideways and upwards and bending the head slowly back. All these are both developmental and corrective for the trunk.

The willed exercises tend to become monotonous, and monotony is the enemy of physical, as of every other kind of, education. The teacher, therefore, proceeds to require marching, running, jumping, halting, and starting by signal. •These

exercises are not only stimulating, they give further occasion for training in carriage. By this time the pupils have warmed to the work. Their whole metabolism has been quickened. Under the physiological excitement, they can undertake heavier things. They are ready for discipline, for competitive tests in racing or jumping, for organised dancing, in fact for any vigorous and systematic way of working off the energy generated by the earlier movements.

But at this point the teacher knows that the limit of benefit is near. He, therefore, quietly manœuvres his squad mentally and physically out of the jumping, running, or dancing games into a quiet march, with leg exercises and turning of the trunk. Last of all, he requires the pupils, with arms rising sideways, to take a few deep breaths and so pass gradually and quietly into rest. The half-hour is over and the children return with pleasure to their intellectual work.

#### *9. Adaptations to Different Ages*

This is a general sequence of movements; the individual exercises are of endless variety. But one inference is obvious: to obtain the true benefits of physical education, the skilled teacher is a primary necessity. He needs free space, well lit, well ventilated, preferably unenclosed. By far the greater part of these exercises he can secure without any specific gymnastic appliances. When, however, he comes to the training of older children, where the growth is slowing down and training in strength begins to

predominate, where the muscles are stronger, where the bones are more fully grown, where all tasks, physical and mental, are heavier, he needs some special appliances, if only to preserve the drill from fatal monotony. Boys and girls of twelve and upwards feel an imperative need to act upon their environment and to modify it. They demand difficulties, new obstacles to be overcome, new activities to master. But the general sequence of exercises will follow the principles that govern the type given; the difference lies mainly in the greater vigour and seriousness.

But these exercises are suited only for children of eight or upwards. Indeed, even for these ages, the teacher has to be watchful in the selection of the sequence of exercises and in the demands made on the children's energies. It is difficult to be sure that the exercises have the same value for all the children. This is one among many reasons why physical education *must* be kept in the hands of persons skilled both in the theory and in the practice of the system.

Nothing has yet been said of the physical education of the younger children, those from five to eight. Let it be premised that at this age the primary demand is not willed exercise but play. But play must be so organised within the schoolroom, or without, as to secure for the infant mind all the æsthetic delight of a spontaneous game. The spontaneity of infancy can realise itself to the full in the beautifully elaborated games and dances of the modern infant room. The proof that they are right is the manifest joy in their performance.

### 10. *Physical Education and Growth*

In the systems of physical training now struggling for survival many tendencies are apparent; but between the systems in favour thirty years ago and those in favour to-day there is a cardinal difference of idea. Thirty years ago it was assumed that the best system for the training of school children was the military drill then practised. The revelations of medical inspection have shown the absurdity of requiring military drill from children with defective eyes, defective ears, dangerously affected joints, and many minor ailments. But apart from any question of disease, there has been a closer physiological study of childhood. The idea of growth now dominates every system of education. Even in the military gymnasia the ancient system of acrobatics has ceased to be considered either scientific or practical; but in the schools physical drill has definitely yielded place to physical education. The exercises suited to the grown man are dangerous to the growing child. It is now understood that superactivity in childhood means a shrunken and stunted body, a premature integration of tissue, or a retardation of growth; for in a rapidly growing organism the margin for training is narrow. Here the practice of physical education has drawn enlightenment from the kindergartens, the play centres, and the scientific study of the real nature of play. In fact, in the early stages of school life the primary problem is to prevent the over-direction of the child's habits and to preserve a working compromise between play and work.

Between the ill fed child and the well fed child the difference is incredible ; for the ill fed child shrinks in its rate of growth to suit the food available. Growth is a mathematical function of feeding. Of this the older systems took no account whatever ; the newer systems are based on it. The exercises required in a typical course must now be governed through and through by the conception of growth and adapted in nature and quantity to the active impulses of the child. Until the teacher understands growth, the interest in physical training will tend to wither and the practical lessons to become mechanical. Once he does understand it, physical education will evoke the same intensity of interest as the other intellectual studies. A teacher that is incapable of being fascinated by the biological mysteries and revelations of growth in the individual child, is shut out from the primary joy of all teaching.

#### 11. *General Criticism of the Swedish System*

The types of exercise sketched are those followed at the Dunfermline college of hygiene and at other colleges of physical education. At the Dunfermline college, of which I speak because I am most familiar with its curriculum and practice, the aim is to keep the methods of training fluid. The Swedish system is the basis of the curriculum ; but it is adjusted and developed in the light of modern physiology ; it is not regarded merely as a dogmatic cult. This system is now the predominant system in Great Britain. In the promotion of physiological growth and nutrition

it has admirable possibilities ; but for children it is not without its weaknesses. My personal impression of the system is that, as ordinarily taught, it tends to be monotonous and uninteresting to children. Consequently, it needs greater vivacity and concentration in the teacher. If it is to develop its full power in the promotion of nutrition in the growing, it must gather into itself more of the quick spontaneity of the growing child and drop some of the too slow movements suitable only for the grown. Further, I should like to see a greater effort to train the senses. In present practice the motor energies always predominate. Incidentally, it is true, the sensory energies profit. But there is little in the system to develop the co-ordination of sensory and motor. The ball games, for instance, have little place in the system. Yet Houdin, the conjurer, found in the tossing of balls the most perfect method of increasing the sensitivity of the hands and of developing the co-ordination of hand and eye. The best "catch" at cricket is highly trained in eye, hand, and body. The tossing of balls offers many possibilities for sensory education at school. Every playground keeps making suggestions about balls, skipping, balancing on one foot, and many other well tested exercises. But, except in the cricket field or in the playground, I have never seen the ball games exploited for their true use—the training of the grouped senses in alertness and skill. The training of the eye and ear in the judgment of distances is also important and might well find a place in the later school. No doubt, woodwork means training of hand and eye ; there

is everything to be said for it from that standpoint. But I am sure that, up to the present, we have failed to make the full use of many of the age-tried games. Dancing has come into its own. Musical drill, which went into the shade for a few years under the spartanism of the earlier propagandists, has more or less revived. But here, too, we are far from the full uses of rhythm. Short of Dalcroze "eurythmics," a superbly elaborate musical system, every school could do something vital to evoke the natural rhythms of childhood. For the older boys and girls fencing might well take the place of much of the rib-stall work or boom work of the Swedish gymnasium. It is to such quick, co-ordinated exercises as the ball games, dancing, fencing, and their many congeners that we must look for the counterbalancing of the tendency to overdo the grosser muscular exercises.

But, through all systems of exercise, two principles must be honoured, if the pupil is to benefit and not to suffer. First, every exercise should be adjusted to the pupil's state of fatigue and should end well within the fatigue limit; second, from infancy, increasingly with age, the pupil's heart and arteries should be carefully superintended. The heart is the first mover of the organism; its action is the first and final test of a system; its gradual training is delicate and difficult. In the infant the elasticity of heart and arteries is very high; it fades off in adolescence, and its limits become relatively fixed by the age of thirty. Under the direction of the unskilled the heart of the school child may be damaged for life. In my report



to the Physical Training Commission I recorded one or two such cases, and I am satisfied that at the ages of violent overplay, when prolonged football and long distance running are in favour, the hearts damaged are many, and the nervous systems overdriven are at least an appreciable fraction. Even in the relatively grown, for example, the late adolescent, the overconcentration on purely muscular activity has its dangers. As mental training rises to its highest tension, physical training should relax. Any real student knows that the preparation for an examination crisis is incompatible with high physical form. The work of the gymnasium must then yield to the mildest derivative exercises, walking, or any similar activity that involves neither skill nor concentration. In Switzerland, I am told, the physical training in the secondary schools is remitted for the last six months or so of the curriculum. The reason lies on the surface: the cerebral energies cannot be organised intensively on two occupations at once. This is not inconsistent with the view that steady cerebral work benefits by a certain mean of muscular form. Where this mean is exceeded, the nutrition of the brain itself is apt to suffer. But in the problem of the correct balance between the various forms of cerebral activity there are many factors; not least is the child's experience in his first five years of life. On that point the investigations of Freud, Jung, and many other psychoanalysts leave no doubt. Their investigations, though bearing only indirectly on physical education, ought, at least in their general results, to be known to every teacher. The nervous

child is often more a problem in psychology than in physiology.

In the more fully grown, for example teachers, other dangers of high muscular training emerge. An expert in voice production once told me that all systems of persistent muscular training, even the Swedish system as conducted on the well known lines, tended to interfere with the delicate muscular work of the voice. It is not uncommon to find "teachers' throat" seriously aggravated by muscular training. In children, this is much less likely to happen; but it shows the need for care. This particular expert gave the assurance that his preference was for the quick muscular action used in the early stages of ju-jitsu. He considered that slow tensile movements, however necessary for correction or prevention of deformities or bad postures, were, in the grown at least, liable to end in gross excess of connective tissue. Demeny considers the whole Swedish system too slow for the quick French temperament. These points I mention only to emphasise the need for scientific skill in the teacher of physical training.

### 12. *Results of Physical Education*

So far as they can be tested, the general results of physical education as now conducted in the schools are, beyond question, good. But tests of bodily improvement are difficult to apply. Measurement of muscle is difficult and rarely conclusive; for the increases due to growth cannot readily be deducted. But there are certain resultants of training, that, if

they cannot be measured, can none the less be observed—the improved postures, the grace of poise, elasticity of step and general carriage, the manifest difference in action between a student of the first year whose training is only begun and a student of the second year whose course has reached its natural climax in the dance. One cannot but observe the cleaner swing and balance of the step, the more elegant dynamics of the poise and the total air of physical sufficiency.

On the other hand, in the specialised teacher whose whole time is given to physical education the strain of the teaching soon tells. This is a problem of itself. The case is different with teachers trained at a provincial training centre, where the intention is not to train specialists for whole time work, but to convey to the student a sufficient knowledge of principles. The individual physical training of the student is there rather a hygienic exercise than a discipline. During ten years' visiting of training centres I have never heard of any evil results from the physical training. On the contrary, the good results have been very manifest. Wherever exact studies have been made of the general school population, the conclusion is that physical education, as conducted at school, does promote brightness, alertness, vigour, interest, spontaneity, order. On the physical side, we expect and usually find equalising of the circulation, a better diffusion of nervous power, a greater readiness to endure small annoyances and pains, increase of appetite, improved absorption of food, a rise in general fitness for work.

### 13. *The Limits of the School*

This discussion has been confined to what can be done at school. Incidentally, it has been shown what the limits of the school must be. Of that large part of the child's life that must be lived outside the school and utilised in free play and other forms of personal experience, nothing has been said. It is only a small part of the life that the school can control, or, in this specialised sense, ought to control. After all, the school is only an instrument in the hands of the family for the furtherance of the ends of the family. The school is not an end in itself. It is, however, an instrument essential to the education made necessary by the complex system of modern social life. It shortens for each individual the whole civilisation he must live through. Just as life needs initiative and staying power, so must the school promote these qualities. It is a fundamental end of all education, physical and mental, to organise initiative and to evoke staying power. But if we are to get the best out of any system the teacher must keep clear in his mind this conception of the immediate purpose of all his teaching.

### 14. *Requirements of University and Teachers' Training Centres*

From this general discussion it is easy to infer the type of equipment wanted at the university or teachers' training centre, where the primary demand is—not physical training, but—high, and prolonged intellectual concentration. It goes without saying

that a certain amount of open-air exercise, whatever form it takes, is essential wherever the curriculum extends over years, and the special periods of study extend over months. On no other condition can a large percentage of so called breakdowns be avoided. But every student ought also to have the chance of passing through a course of scientific physical education. For this, some special equipment is necessary: a spacious well ventilated or open-air gymnasium, fitted with rib-stalls, a boom, a jumping horse, climbing ropes or poles, and one or two other minor appliances. The trapeze, fixed or flying, is still in evidence; but it has not the ideal place it held thirty years ago. But more essential than any special appliance is an instructor skilled in the science and art of physical education. If all students had full access, under medical direction, to an adjusted course by a skilled instructor, one would expect that, even with two or three half-hours a week, the physical form could be well maintained and the intellectual output steadied and increased. The natural instincts are never a sufficient directive either to the kind or to the quantity of exercise. Some external norm is needed. To get the student over his dead points, in physical acquisition as in intellectual acquisition, something has to be *required*. But, given normal health, the required task always creates an answering initiative. Where it does not, training by assent degenerates into discipline by order. What we need is the best way of teaching a student to stand alone mentally and physically.

This question might be pursued into greater

intricacies; but the present discussion must confine itself, as it has done, to indicating generally what time, equipment, and skill ought to be provided for physical education at the various stages, from the freely generalised provision of play for the infant to the highly specialised training of the superintendents of physical education.

### 15. *Conclusion*

How great the movement towards physical education is, I have tried here only to suggest. But the record implied even in this impressionist sketch is a marvellous record. It shows that the whole mind of Europe is awake to the need for a new attitude towards the values of life. If it is in part a reversion to Hellenism, it is probably because the Hellenic synthesis of civic life through the individual personality is a fundamental form of human development. At the beginning, we saw how physical education must be conceived as a mental process, as a partial form of the realisation of the will, as a genetic factor in the growth of personality. This idea puts in their true perspective the multitudinous rituals of the medical inspections, the medical treatments, the physical exercises, the crude physical mechanisms of training, the more subtle elaborations of the public administrations, the still more subtle mental fermentations of the schoolroom. Through all the dreary, weary detail of the day's work, the teacher now knows that he is helping character to master its instruments and so to create for itself the power to walk calmly through life to the end.

### III

#### THE INTERESTS OF GIRLS IN ELEMENTARY AND CONTINUATION SCHOOLS

EXPONENTS of educational theories and framers of educational systems have not always understood that the interests of girls are not identical with those of boys. Indeed, an historical survey of educational conditions in our own country would probably lead to the conclusion that, until a comparatively recent date, our ancestors held with the Chinese that the words *child* and *boy* are synonyms, and considered girls as inferior, though necessary, creatures, on whom education need not be wasted.

We see St. Columba and his Culdee disciples spending treasures of love and patience in teaching the boys whose hands were to bear the torch of Christian learning to the next generation. Bede labours until the last moment of his saintly life so that his boys may not "read a lie" when he will no longer be with them. Alfred desires that every free-born youth should learn to read and write well English speech. William of Wykeham, Dean Colet, and many another pious founder, are still held in honoured memory in the schools they set up for boys.

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Our literature, from very early times, is rich in references to the schoolboy's pleasures and pains : the schoolgirl makes but a tardy appearance.

Yet it is to Alfred's mother that tradition ascribes his first desire for learning, and every age has furnished examples of women whose keen and eager brains "broke their birth's invidious bar," and proved that woman too was endowed with intellect worthy of cultivation.

To trace the first beginnings and the development of such cultivation in English and Scottish schools would be a fascinating task, demanding, however, wide reading and patient research in the collection of facts from the records of convents and from old memoirs, letters, and diaries ; and the student would find, as he came nearer to our own days, a rich storehouse of illustrations of its results in the pages of our novelists. In Scotland, from the days of Knox, we should see girls sitting side by side with boys on the benches of the parish school, learning the same lessons, sometimes even to Latin and Greek, and subject to the same discipline of the tawse. In England we should see the village school under the patronage of the rector or vicar, giving the merest rudiments of education to little children who would be called away from school to begin work on farm or mill at the early age of six, seven, or eight years. Some of the boys might attend evening classes taught by enthusiasts like the Bartle Massey of *Adam Bede*, and thus continue their school education, as farm-workers used to do in Scotland, by attending school in the winter months. But for the vast majority



of English girls education beyond the merest beginnings of the three R.'s was the privilege of the well-to-do, and was conducted mainly in private schools, many of which were scarcely caricatured by Dickens in his picture of Miss Monflathers' school, and many of whose heads were, like that lady and Mrs. Micawber, possessed of no other qualification for such a position than a suitably inscribed doorplate.

But it is not part of the present task to show how the national conscience was awakened to the necessity of stemming the broadening stream of illiteracy by making the education of all its children the business of the State. The task is rather to inquire whether, since the memorable years 1870 and 1872, the State has done all it might have done for the interests of girls.

At that time it called into existence a school board in every parish in Scotland, and in towns and cities the first work that lay to the hand of the newly elected boards was the building of new schools for the thousands of children hitherto deprived of educational opportunities by the rapid increase of population, which had outstripped the efforts of the churches to keep pace with it in school accommodation. The new schools followed the tradition of the parish school in providing for the teaching of boys and girls together under one headmaster, and to some extent in the same classes. In Edinburgh, Glasgow, and other large towns there were already, in 1872, long established boys' schools and even a few girls' schools, but these were exceptional, and, at first, outside of the sphere of school boards. Later on

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some of them were brought within the sphere of public administration, such as the High School and Allan Glen's School in Glasgow, which are still schools for boys only; but as a rule school boards have not established separate schools for the sexes but have adhered to the principle of co-education. The Girls' High School, for example, is the only exclusively girls' school under the school board of Glasgow.

In England conditions are exactly reversed, the mixed school being the exception, and the question naturally arises, which is the better practice in the interests of girls. It is difficult to decide as to the relative merits of the two systems. Personal experience may engender bias toward one or other side, but some points suggest themselves for consideration that may help toward a solution.

First, it is evident that co-education lessens expenditure, and that the cost of education would be greatly increased if separate schools for boys and for girls were set up all over the rural districts. Hence, unless co-education is to be condemned on moral or intellectual grounds, it will probably continue to be the rule where schools are necessarily small.

So far as my personal experience goes, objections to co-education on the score of morality are groundless. Very rare are the cases in which either boys or girls incur the reproach of overstepping, however slightly, the bounds of propriety in their intercourse with one another. In the classroom, in the playing fields, in the social meetings of the older pupils, in the meetings of school literary societies and school clubs they meet with the frank good-fellowship of comrades.

No doubt there are cases in which a stronger attraction and a deeper affection arise between boy and girl comrades, and the comrades become life partners ; but these are scarcely a reproach to a school, and one is quite at a loss to know on what possible evidence certain English teachers, at a conference held some years ago, eager to add to the number of girls' schools, painted lurid pictures of morals in our Scottish schools !

With regard to the " lesser morals," the manners that " makyth man," the case is more doubtful. In most instances, I believe, the benefit to boy and girl is mutual. Each gains some perception of the other's nature, and unconsciously the boy becomes more gentle, the girl more strong. Each learns to be at ease in the other's presence, and, while the boy finds many occasions for the little acts of chivalrous courtesy to the weaker sex that give charm to his strength, the girl learns that it is dishonourable to trade upon his chivalry. But these effects do not always follow : they are most evident where the manners of the school are the reflexion of the manners of the home. If, as happens so often, the children of a school are largely drawn from homes whose influence counteracts that of the school, the roughness of the boys reacts upon the conduct of the girls, whose own manners are so often little better. Yet girls in such schools are so much more easily led by affection than boys, so much more susceptible to the influence of a woman, so ready to imitate her mode of speech and to make her their model in all things, that schools for girls alone, staffed entirely by women

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of refined speech and gentle manners, yet capable of the requisite firmness, would exercise a civilising and refining influence in the poorest, roughest districts of our large cities. They are in fact so much more needed there than they are for the daughters of the well-to-do and the well bred, that in the light of this consideration the pros and cons of the system have to be examined afresh. This is said in reference to the elementary stages of education, for it is plain that after adolescence new forces come into play.

On the intellectual side, too, there is room for different estimates of the value of co-education. Where boys and girls are taught together there is a common curriculum, in which the only recognition of a difference in sex is the inclusion of needlework, cookery, or housewifery for girls, and a different form of manual work for boys.

This practical identity of curriculum completely ignores the fact that the average boy and the average girl differ in their tastes, their aptitudes, their rate of mental development, and their physical powers. No teacher of experience can have failed to observe that certain subjects are more attractive to, and more easily acquired by, girls than by boys, while the latter make quicker progress in others. Often, therefore, in a mixed class, the teacher feels that the boys are acting as a drag upon the efforts of the girls, or that the latter are retarding the progress of the boys. Now that our schools have been freed from the unbending rule of a government code of attainments with its annual tests, and teachers may draw up schemes of work adapted to individual schools, it

might be well to consider whether such schemes would not be more easily planned and more fruitful of the best results if they were to be drawn up separately for boys and for girls. But we cannot shut our eyes to the fact that this would at once cut at the root of co-education.

Meanwhile, what have our girls gained from the years spent in an elementary school ?

In Scotland they come, as a rule, as babies of five years old, and in England at an even earlier age, but young as they are, their minds and hearts are not the virgin soil that a stranger might easily imagine them. Before the teacher begins her task other sowers have been at work : seed after seed has fallen into the heart of the little girl, cast by careless or by mischievous hands, and has sprung up there as flower or weed—flower to be tended and cultivated, weed to be gently uprooted lest it spread its poisonous growth. Whence hath it then the tares ? Consult the infant mistresses and their staffs in the schools that receive the children of those who dwell in dark courts and wretched slums, if you would know how much the little girl may have to *unlearn* when she first comes to school, and if you would rightly estimate the work of the elementary school.

Nor is it only at the child's first coming to school that the teacher has forced upon her notice the fact that school performs but a part in its education. All through its school life the teacher is either helped or hindered in his work by the influences outside school, and it would be well if the censorious critic of "board school education," as he weighs

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it in the balance, would bear in mind the kindly words of Burns :

What's done, we partly may compute,  
But know not what's resisted.

Even members of school boards do not always realise how much more difficult is the teacher's work in some schools than in others, nor how inevitable are the differences in attainments and culture to be observed in the girls who leave the elementary schools at the qualifying stage.

The best of these are the girls of average ability or more, who have been favoured with good health and blessed with parents who value education, and whose circumstances permit them to keep their children well clad, well nourished, and in regular attendance. At the age of twelve such girls have acquired a fair knowledge of arithmetic, great facility in reading, a liking for books, and considerable ease in the expression of their thoughts, both oral and written. Geography, history, and nature knowledge have widened their conceptions of time and space, awakened their sympathies with the life of bird and beast and insect, of tree and flower, and aroused their wonder at the marvels of earth and sea and sky. Physical drill has strengthened their muscles and given ease and grace to their movements. Hand and eye have been trained to harmonious co-operation by the needlework that fits them for household tasks of making and mending and beautifying, and by the drawing lessons that give them the power to reproduce the forms and colours that have pleased their eyes ;

and their voices have gained sweetness from the songs they sing. And through all there runs the golden thread spun from the old, old stories of the Bible and its lessons of love to God and man.

Such girls love their school, they love their teachers, and they have the pleasant, natural manners, equally removed from awkward shyness and from obtrusive pertness, that are the result of that less repressive discipline which has replaced the iron rule of an older day. In them is seen at its best the result of our elementary education; and who will deny that, in its own degree, it is "a liberal education" and a "fair foundation laid whereon to build" still higher?

Unfortunately there are many causes at work to prevent the attainment of this result in all pupils. The progress of some children is retarded by illhealth, by mental deficiency or slow development, or by irregular attendance. The last named cause, if not an effect of the first named, is usually due to parental negligence, and its victims, falling behind their classmates, soon lose interest in their work. In vain the teacher tries to urge them on: they become more and more unwilling and almost unfit to make any mental effort, and at last, as Christopher North might have said of them, they leave their bodies in the classroom, while their minds are far away in the outside world to be theirs when they shall be legally delivered from the bondage of school. When such pupils are allowed to pass on to supplementary or higher grade work they enter upon it very ill equipped, and seldom indeed do they derive much benefit from their latest years at school.

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It is at this stage that there often becomes apparent, and not only in dull pupils, a want of initiative, a disinclination to face difficulties unaided, and a consequent failure to overcome them. These phenomena may be the result of physical weakness in girls at this age, or of a temporary retardation of mental development. But in most cases they are due, one may suspect, to a defect in the present system of education, the responsibility for which cannot be entirely disclaimed by the teacher, although he may point to inspectors and school board members as equally responsible.

That defect is undue haste in seeking results. Teachers might well echo the complaint of Marvel's antediluvian lover who found his few centuries of life too brief for the telling of his love tale. They would fain adapt their pace to the needs of the slow, and even allow the quicker witted to spend some time in puzzling out things for themselves.

But always at their backs they hear  
Time's winged chariot hurrying near—

bearing with it the "qualifying" examination to be passed at all costs by all pupils of twelve, or, if possible, of even fewer, years! All difficulties have to be smoothed away, as far as the teacher's skill can serve, and his pupils come to look upon such assistance as a necessity and a right; they can attain to some measure of selfhelp at a higher stage only by a determined effort, almost painful at first though it may eventually become a pleasure. It is to be hoped that the extension of the compulsory period of school



life will not bring with it such a raising of the level of attainments to be reached as to maintain or increase this pressure; the prolongation of school life should allow a more natural pace and greater selfhelp and selfreliance at each stage.

Until a child has passed the qualifying examination the subjects of study are those that may be looked upon as essential for all children, but after that point it becomes necessary in framing curricula and schemes of instruction to take into account the future career of the pupil. It is not that education should be strictly utilitarian in the sense that each school subject should have a direct bearing on some method of earning a livelihood: still less should the day school be regarded as the proper place for vocational training. The great majority of the children who begin higher grade or supplementary work about the age of 12 have not yet shown any very strong bent or aptitude which would enable a teacher to advise without hesitation the choice of any particular career. Even where there is a strong bent towards a certain occupation at the age of 12, it is by no means certain that that bent will continue; nor does it follow that an evident aptitude for certain pursuits will be encouraged by a child's parents. Hence too early differentiation often leads to what may be considered a waste of time on the part of pupils who set out on paths which they afterwards abandon in order to enter on new ones. Still, it will be generally conceded that after the qualifying stage differentiation is necessary, and that it is to the pupil's advantage although in some instances he may make mistakes.

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his choice of a course or suffer from the mistaken choice of parents.

The present system offers two broad lines of education beyond the qualifying stage. The pupil may begin higher grade studies, which afford a certain amount of option and which lead to the intermediate certificate at the end of a three years' course. Or he may enter upon a two years' supplementary course, in which, again, he may choose to some extent the subjects most likely to be of use to him in his future occupation.

The girl who aims at a professional career naturally chooses the higher grade school, where she will be admirably trained for entrance to a university, a training centre, or some other central institution. The higher grade school is also the natural avenue to a specialised training for the more important and lucrative kinds of office work, such as secretarial duties and foreign correspondence. Omitting the subject of secondary education for girls, dealt with in a separate chapter, we pass on to consider the girls who, on leaving school, will be engaged in industrial or domestic occupations.

The supplementary school or course should attract such girls as naturally as the higher grade school attracts the girls with a professional aim, but hitherto it has suffered from the prevalent idea that it is intended for a class socially unequal to that of the higher grade pupil, or as a refuge for the mentally defective. The unfortunate result is that parents, may do the best they can for their children, that they led to a wrong choice. Children who might

make admirable progress with a supplementary course are sent to a higher grade school to be educated on lines quite unsuited to their tastes and aptitudes, and hence comparatively of little benefit, while many children attending supplementary courses might be doing brilliant work in a higher grade school. The supplementary course should be made as long as the intermediate, its completion should be marked by a certificate recognised as different from the present intermediate certificate, but not inferior to it, and the very name "supplementary" should be dropped. With the school age raised to 15 years there will remain no reason for different names; the phrase, "higher education," will have a wider signification than is attached to it at present; and parents will choose the type of higher education best adapted to a child's capacities, unprejudiced by any apparent social inequality between different types of schools.

For convenience' sake, however, it will be simplest to retain the present name of supplementary course in discussing its capabilities for the training of girls in view of domestic and industrial pursuits. At the outset let it be clearly understood, and throughout be it never forgotten, that this training is to be no mere preparation for gaining a livelihood: it must be an instrument of culture—culture of body, mind, and spirit. It will, naturally, employ the hand to a greater extent than does the higher grade course, but the girl must be trained to make her hands the docile servants of her brain. "Madame How" must be accompanied by "Lady Why" in all the practical

work of each branch of housewifery ; and practical work must not overshadow the good general education which is the need and the right of all girls, whatever their ultimate lot in life may be. Never before has that need been so urgent and so plainly proved. The great World War has summoned women to forms of labour and spheres of duty hitherto held to be beyond their powers or unsuited to their womanly nature, and we are forced to reconsider our ideas of woman's place in the world. Henceforth, too, women will exercise their newly acquired right of suffrage, and we may be sure that they will not rest content with the present limitations of that right which still leave them on unequal terms with men. If women, then, are to make their new political influence felt for good, they must see to it that no type of school education shall train girls to be mere household drudges or helpless, unintelligent pieces of the machinery of commerce and manufacture.

Such is by no means the aim and result of the supplementary course for girls. In it the girl continues her study of English, including history and geography, and learns something of the rights and responsibilities of citizenship and national inheritance. A considerable part of the time devoted to these subjects should be spent by the girls, not in listening to formal lessons from the teacher, but in independent reading of books to be selected by themselves from a good school library and to be made subsequent subject of discussion with their teacher. These periods of reading should be spent in the library itself, and every school should have at least one well

lit comfortable classroom equipped for this purpose, with open shelves filled with properly classified books, and with a good supply of works of reference always at hand. The teacher's part during those times of quiet study would be to show the girls how to use those reference books and to encourage their use, to give advice, when needed, in the choice of books to be read, and to talk to the pupils in turn about their reading. In no other way will she gain so deep an insight into a girl's nature, tastes, and ideals, and be placed in so favourable a position to exert wholesome influence upon her. If a foreign language is studied also, well and good. But English literature is so rich in masterpieces of all kinds that a girl may be well educated and highly cultured by the study of English alone. Small French and less German need be no greater drawback or reproach than the "small Latin and less Greek" of which we have so often heard.

While the girl is learning to appreciate some of the treasures of English literature, and acquiring a taste for what is sound and a distaste for what is worthless, she is also learning to use her mother tongue with some degree of force and grace both in speech and writing. Readiness and aptness in speech should be fostered, problems suggested by reading should be discussed, say, according to the ordinary rules of a literary or debating society. Written compositions will include letters of various types, familiar and formal, essays on simple themes drawn from the pupils' own experience, observation, and reading, or from their own imagination. Optional exercises in verse may discover latent talent, for the sake of

which a mass of doggerel may be endured. Even doggerel will have its uses in cultivating the feeling for rhyme and measure, and will gradually improve so much in quality as to outgrow and shed the name. Arithmetic, for the majority of the girls, should be confined chiefly to what is required for the keeping of household accounts and the problems of marketing wisely and economically, and of the safe and profitable investment of savings. In all arithmetical practice both accuracy and speed should be aimed at. To very many girls arithmetic is exceedingly difficult and distasteful, and since so many of its rules are unlikely to be of any practical or other value to them in after life, more congenial forms of mental discipline can be easily found in other subjects.

Science for girls in this course should be closely related to the domestic arts, which will gain in dignity and interest from a knowledge of the natural laws that underlie them, and from a realisation of their importance in the life of peoples. For, whatever may be the other parts played by women in the world's work, their highest vocation, the one to which nature herself calls them, is that of homemaking. "Many make the household, but only one the home"; that *one* is the wife and mother. Not all our girls will fulfil their natural destiny, but if we would have our land filled with happy, well-ordered homes, we should train all girls in "gracious household ways." Science lessons need lose nothing of their educational value by being related to this womanly vocation; rather will they gain from the atmosphere of reality and utility thus imparted to them. In the kitchen and

the laundry experiments made in the laboratory are repeated in a more practical form, the theories built upon them are put to the proof, and both the science teacher and the teacher of a branch of housewifery find their work mutually benefited. In rural districts science lessons may be similarly related to gardening and poultry or bee keeping; girls, as well as boys, take kindly to these arts.

This sketch of supplementary education is not a mere exercise of the imagination. It is largely a picture of the education provided all over the country for the greater number of schoolgirls between the ages of 12 and 14, for it is the minority who are being educated in higher grade or secondary schools. Drawing, music, and gymnastics are continued throughout the course, and, as in the elementary school, the study of the Bible forms the basis of simple, undogmatic, religious teaching. Such an education—again, *as far as it goes*—is an excellent one for a girl who is not aiming at a professional career, if it has been in the hands of skilled, sympathetic, and experienced teachers, and if she has been able to profit by it. Its good results would ere now have been more marked, had all who have enjoyed its opportunities received analogous benefits in their homes and remained at school until the age of 15.

Even at 15 a girl is very young, a fact too often forgotten by those who are most vehement in their condemnation of our present educational system and most scornful in their disparagement of its results. The most ideally perfect plan may fail to produce a

perfect result. The weaver may have before him a faultlessly beautiful design to be wrought in tapestry ; but his yarns may be rough and knotted and uneven ; his loom may be of antiquated, cumbrous make, labouring and creaking scarce less heavily for some awkward repairs ; his hand may slip through inexperience or carelessness or weariness ; masters, managers, foremen, supervisors, may be ever urging him to hasten ; at last his still unfinished work is snatched from his hand, perhaps to lie exposed to wind and weather until lines of beauty and harmonious hues of design are warped and blurred, and its use and beauty all but lost.

The parable is easy of interpretation to those who have read thus far. If its analogies, like those of other parables, are not quite complete, it is in that they fail to express with adequate force and fulness the multifarious causes of imperfection in the results of the teacher's work, directed, as it is, by no perfect plan, but by a system admittedly defective both in conception and administration. No claim of infallibility is made on behalf of the teacher, who, like other mortals, is liable to error ; but the illustration may lead to a fuller realisation of the difficulties of his task.

Part of the cause of his want of success has already been considered. To some extent the drawbacks are almost insuperable. For instance, mental and physical weakness must always affect injuriously the education of children. Other difficulties are due to faults in our national system, which we look forward with confident hope of seeing amended by improved



conditions under the new Act. Must we set down as inevitable also faults committed by the teacher? Since he is human, he has his limitations. But his faults are slight in comparison with other causes of failure.

• The saddest causes of all are those due to moral and social conditions outside the sphere of the school. As already said, not a few children come to school from homes made wretched by parental negligence, vice, or crime. School boards may do their best in such cases for the physical well-being of the child, by medical inspection in school, the visits of sanitary officers, provision of free baths, free books, and even food and clothing, some of the cost of which may be recovered from the parent. But the teacher is ministering to minds diseased even from infancy, and the lessons of each day are largely unlearned in the evil atmosphere of home and street before those of the next day begin. So children may learn to read and write and to share in all the other school activities, and yet prove all but impervious to the training in manners, morals, and religion which the school affords.

Other cases there are in which poverty has hitherto told hardly upon the child, who may have been helping before and after school hours to support his family. He is too tired for mental effort in school, and has little time for study at home, if, indeed, his home can give him either space or quiet to attempt it. The recent legislation promises an immense improvement here.

It is largely girls from those two categories who

leave school as soon as possible after attaining the age of 14, and who, even where they are enrolled in continuation classes, fail, through their irregular attendance, to profit from the instruction. It is they chiefly who drift into the various miserably paid mechanical employments that demand no great intelligence, no special aptitude or training, and hold out scant hope of better things to come. This is the unskilled labour that, in normal times, earns a bare subsistence wage or something even lower. Their days spent in monotonous toil that deadens the mind, their evenings spent in homes darkened by grinding poverty or degrading vices, or in the dangerous playground of the streets, they retain less and less of the beginnings of culture acquired in school and degenerate into rude, boisterous, loud-voiced hoydens. They may be met in little groups or bigger gangs, and their coarse speech and rough horseplay make them a terror, and constantly lead them into juvenile misdemeanours or actual crimes. If our own well ordered, not to say selfish, lives have not shown us such girls, we may see their portrait in Mr. Pett Ridge's "Mord Em'ly" and her friends.

The employment bureau can do little for these girls, but something may be done by after-care committees, school clubs, girls' guildry companies, and other similar agencies, to give girls of these classes new hope and encouragement by renewing the refining influences of school and training them to enter some sphere of skilled labour. The State owes a deep debt of gratitude to those whose labours in

these agencies so often save girls from sinking into apathetic acceptance of a sordid and squalid life, or turn their passionate revolt against the social conditions that seemed to condemn them irrevocably to such a lot, into an equally burning desire to make life happier for others.

The more deeply we reflect upon the problems of education and the causes of its comparative failure to raise and refine all the children of the State, the more do we realise that these problems are bound up with social reforms, and that the causes are not to be found chiefly in the defects of our educational system. For the success of education we need smaller schools and more of them; we need smaller classes, in which it will be possible to give more play to the child's individuality; we need more teachers, better trained teachers, better paid teachers, more highly honoured teachers; we need more freedom for teachers and less supervision; we need all the reforms promised in the recent Act of Parliament. But when all these and more have been secured, their effect will continue to fall very far below our hopes if the school must still contend with the unhappy social conditions alluded to, which press with such crushing weight on thousands of homes and their inmates.

What fine stuff in those children's nature has successfully resisted the warping effect of these conditions, has been strikingly shown in the years of war, which have called forth such unsuspected wealth of latent ability and heroism and devotion in the cause of freedom and right. When our legislators are inspired

with courage and wisdom "to take occasion by the hand" and make laws that will render British homes healthier and happier, may we not hope that the nature of the children will be touched to still finer issues?

The hope is not ill founded, for the education afforded by our elementary schools, where it fails, does so, as it seems, much less conspicuously in the development of the mind and the instilling of high ideals, than on the side of culture and that simply because culture cannot be acquired in school alone; it is the result of all the varied influences that bear upon the individual, and to the boy or girl; the strongest of these is the home. What wonder then that so many girls leave school with so little appreciation of what is really becoming in conduct and beautiful in manners, of what is really good and admirable in literature, art, and music, of how to spend their leisure hours wisely and well? What can the printed page or the teacher's words effect for girls who return from school each day to homes without books or pictures worthy of the name, homes where voices are rough and words coarse, where there is scant room for eating, drinking, and sleeping, and none for quiet thought and study? How can such girls learn the art of making the happy homes of which they may read but which they never see?

One opportunity at least they have, in the housewifery centres where they can practise in a little house under their teacher, and learn as in a well ordered home lessons of neatness and orderliness as they scrub and polish and wash and "tidy up"; of

cleanliness and economy as they cook simple, wholesome dishes ; of courtesy at table when they have set on the table the meal they have prepared, and sit down to enjoy it together. In such centres, while simplicity is the keynote, beauty is not neglected in the choice and arrangements of the furniture. Girls may there acquire for the first time some idea of "the home beautiful," and, perhaps, resolve some day to make one like it, should the opportunity be theirs. We might well, for the happiness of future generations, foster the girl's love of "whatsoever things are lovely" in other ways. One often wishes that the interior of schools was more beautiful, or perhaps "less unlovely," than so many of them are. The walls need not be so drab and bare, the floors might, with profit both aesthetic and sanitary, be much more frequently washed, and the windows need not so often exclude the infrequent northern sunbeam by the products of the spider's and the dustman's labours.

When the benefits of the new Act begin to be felt, and when much of the present work of continuation classes, division I., is done during the day, continuation education may play a very important part in the lives of girls. Work, in subjects requiring most mental effort will be overtaken in great part in day classes, other subjects will be allotted to early evening hours, and some of the latter may be hours of recreation. One evening of each week should be spent as a social evening, with music, recitations, and needlework ; if the arrangements of the school present no insuperable difficulties, some of the evenings could be

made even more useful by groups of girls undertaking in turns the provision of a simple meal, *e.g.* tea. These pleasant meetings would not only make classes more attractive; they would also train girls in the art of making the home the place of pleasant social intercourse. They would, at the same time, afford the teacher opportunities, not so easily found in the ordinary routine of class work, of chatting with the girls on their favourite recreations, of guiding them in their choice of others or of particular lines of study, of interesting them in forms of social work suited to their years and powers. She would thus gain their confidence and affection, so that they would regard her not only as teacher, but as friend, to whom they might always come for advice and sympathy in times of doubt, perplexity, or sorrow.

When we remember that these girls are just passing from girlhood to womanhood, and that many of them are almost certainly without wise guidance, we feel the importance of providing in continuation classes not only instruction in subjects that will aid them to acquire greater culture or increased capacity to earn a comfortable livelihood, but instruction that will guard them against dangers and temptations that are incident to their age and sex. The true dignity and the responsibilities of womanhood should form the subject of lectures and talks on the wise exercise of municipal and political suffrage, and on the part best played by women in work that promotes social welfare. All girls, too, should have lessons in physiology and hygiene, for the health of the nation lies very largely in the hands of woman in the home.

. She should not enter lightly upon the duties of wifehood and motherhood, as she so often does, with little knowledge of what the words imply. At this stage, therefore, we might well call to the aid alike of education, national health, and child welfare, the services of lady doctors to instruct the older girls in matters of this nature. By knowledge and experience a doctor is best qualified for the task, and would find in it one of the highest forms of service to the State.

The continuation school of the future by the variety of its courses should perform for the great majority of girls what the university does at present for a few of them only. It should extend their knowledge, help to train them for their occupations or open the way to better, widen their interests, and refine their minds. We cannot rest satisfied unless we see it send forth, as the years go on, ever fairer and finer types of womanhood, more and more women both strong and gentle, "nobly planned, To warn, to comfort, and command," to be mothers of sons and daughters worthy of them.

Happy he

With such a mother! Faith in womanhood  
Beats with his blood, and trust in all things high  
Comes easy to him, and tho' he trip and fall  
He shall not blind his soul with clay.

#### IV

### THE AIM AND OUTLOOK IN THE SECONDARY EDUCATION OF GIRLS

A LIVING system of education undergoes perpetual modification in response to the needs of a changing society. Before dealing with secondary education apart from other types, or the interests of girls as distinct from those of boys, it is therefore desirable to consider from a general point of view the conditions which will prevail in the near future, especially those arising out of the War.

The time immediately before us will be one of unrest and transition. The great spiritual forces set free by the outbreak of war may decline in strength, or operate in less overt forms. It may even become hard to understand the wave of patriotic impulse which swept over the country, substituting the heroic outlook for commonplace views, and producing a harvest of noble achievement where mediocrity and conventionality had previously flourished. We must allow for reaction and inertia in those who have borne the strain of active service or passive endurance. Men who have become familiar with the horrors of modern warfare can hardly resume life under peace



\* conditions without some loss of sensibility. In many there will be permanent impairment of health, or bodily exhaustion, and recuperation will of necessity be slow. The sights and sounds of the battlefield, with their daily revival of primitive passion and blind instinct, will have substituted in consciousness a dark background of violence and cruelty for the humane impulses and kindly temper characteristic of civilised nations in normal times. Emotional fatigue will persist after nervous strain has been removed. Older people will have little buoyancy with which to set about the social reconstruction which will be necessary. Younger men and women, who have suffered from the hardships of warfare, may well think they have earned the right to a life of ease and freedom from struggle. They may be disinclined to face new problems on returning to civil life, and unable from spiritual exhaustion to frame new ideals unconnected with the increase of material production.

Religious convictions and feelings cannot fail to be profoundly affected by the War. The sense of dependence upon God, quickened in moments of stress and danger, may become faint when the risks of battle have no longer to be faced. On the other hand, peril may have brought a spiritual revelation, and leave a permanent impress on character. But, speaking generally, war is a disintegrating force, and even where it has given a nobler outlook and a less material scale of values, certain dangers must be reckoned with, as attending the abandonment of old beliefs and practices.

Men of different faiths have fought side by side

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in the trenches. Devotion to duty, nobility of life, disregard of selfish interests, readiness to die in a good cause have been shown by the adherents of antagonistic creeds. It is unlikely that much stress will in the future be laid upon theological formulas as evidences of spiritual life. Where the inner life is not very intense, this may lead to laxity and the disregard of church observances and discipline. With the old antagonisms the barriers of sectarianism may disappear. There may, however, be little real cohesion in the larger associations formed, although they may prove effective for co-operation in social and philanthropic activities. Religious life in the deeper sense will tend to become individualised, and will not lend itself to collective expression.

From this it follows that the religious education of the young will depend rather upon atmosphere and the personality of those who instruct, than upon any clearly defined dogmatic teaching. The spirit, which "bloweth where it listeth," will have to take the place of the letter with its permanence and its precision of outline. The young have ever responded to the supreme appeal of nobility of character, where moral codes have left them indifferent. It has always proved the most direct incentive to self-control. At the present time, such impulses to self-government have a special importance. The lack of discipline among the young, the weakening of parental control, and the demand for independence, cannot be remedied by the drastic imposition of authority from without. The desire must be aroused to obey the inner law of conscience and to attain to a higher

standard of conduct. Selfgovernment must be encouraged, both at home and in school. Educational experiments seem to show that responsibility is a better remedy than repression where cases of insubordination or intractability have to be dealt with.

In the intellectual sphere, we have gained from the hardships of war a new stimulus to mental alertness and resource. Improved methods have been devised of producing dyes, optical glass, artificial foodstuffs, and so forth, and they will no doubt be further developed. A firmer belief in the importance of organisation is one of the results of our struggle with a nation which neglects no detail in the pursuit of its ends. State intervention and control have in our country broken down the national habit of individual detachment, and prepared the way for various forms of co-operation; knowledge of other lands has corrected our insularity of outlook. The education of the future must solve the problem of securing concerted action without the sacrifice of individuality and initiative.

It is easy to trace the growth during the last few years of a new respect for ideas; no further proof of this is needed than the general demand for educational reform. It should, however, be noted that the aims of many who desire greater educational facilities for all classes of society are frankly utilitarian. Herein lies an undoubted danger, for to regard knowledge primarily as a means of increasing production and raising the general standard of comfort and prosperity, is to adopt as a theory of life a new form of materialism. The danger is all the more real that patriotic

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feeling will be enlisted to secure the economic supremacy of the nation, and that inducements will be offered to men of exceptional power to use their brains to further the production which is so urgently needed.

But true national greatness can never be the outcome of materialism, however specious or attractive may be the mask it wears. We must beware of imitating Germany in our educational policy, and of so inviting moral disaster similar to that by which she has been overtaken. Educational schemes must be devised in which the humanistic aspects of life are emphasised. History and literature must be included in every curriculum; science must not be taught without reference to its place in the development of human life. The War has diverted from university life and professional callings many men and women of studious bent. Many writers of promise have fallen in action; the ranks of the intellectual section of the community have been depleted. The gaps must be filled, that the balance of the active and contemplative elements in the national life may be restored. For similar reasons, the study and practice of art (in the wide sense) must be encouraged and promoted. The arts (painting, music, drama, etc.) afford on the creative side an outlet for the constructive impulse; on the contemplative side, a refuge and solace from the harshness of real life.

These are general considerations; their bearing must now be shown upon special problems connected with the education of boys and particularly of girls at the secondary stage.

Some justification may be offered for considering secondary education apart from the stages which precede and follow it. The treatment adopted in this paper makes it possible to lay stress on the special features of those years in the life of the adolescent when logical faculty has matured, and the emotions have become less unstable. Amongst these features may be named considerations connected with specialisation in study, with the development of individual judgment, with selfdiscipline, with the spirit of research and of creative activity, with the impulse to social service.

A fundamental question arises at this point. It has been dealt with by writers of educational treatises from the time of Plato onwards. Should there be differentiation between the education of boys and girls in all cases and at all stages? Do the deep seated physical differences between the sexes, corresponding to different life functions and involving, as it would seem, temperamental differences, make it desirable to devise and apply different schemes of education for boys and for girls? Does the system of co-education as it exists in practice justify the claims of its advocates?

Plato's views regarding the education of women have little bearing on the majority of modern problems and may be dismissed, but not without an expression of gratitude to one who, looking at the question of sex from the standpoint of philosophy instead of custom and prejudice, desired to secure a higher status for women. We owe to him the conception of woman as the comrade of man, trained in similar exercises

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and sharing the same responsibilities to the State. The relegation of the sex problem to a secondary position in comparison with the higher activities of spiritual beings, gives a sense of escape as into the freshness of mountain air.

Co-education in the abstract presupposes a reproduction on a larger scale and in different surroundings of the intimate and friendly relations of the family. It is argued that close association and co-operation between boys and girls is the best preparation for comradeship at a later stage, and that any form of segregation is hurtful. It should, however, be noted in dealing with this subject, that co-education in the strict sense is rarely to be found. The term is a misnomer where girls and boys are taught some subjects together for a few hours daily, without sharing recreation or pursuits unconnected with the classroom. It may perhaps be applied with justice to the system followed in a few carefully organised boarding schools. These would seem to have obtained good results.

To the present writer it appears that differentiation of treatment between boys and girls is desirable, at least when the adolescent stage is reached. Statistics seem to show that periods of mental inertia and activity, corresponding to phases of physical development, occur at different ages in the cases of boys and girls. Moreover, the adoption of common standards has often meant overpressure for girls, who have been required to cultivate certain aptitudes (household arts, music, etc.) desirable in the future homemaker, in addition to the subjects prescribed for their brothers.

The question whether close association at school is likely to develop in its more ideal form the mutual attraction of the sexes, is of great importance as regards the future of the race. President Stanley Hall, as is well known, would deprecate any assimilation of male and female characteristics, and holds the view that freshness and dissimilarity are important elements in mutual affection, and tend to promote the highest type of marriage relations. Two dangers must be taken into account where co-education is concerned. In its genuine (and rarer) form, familiar association on a matter-of-fact basis may prevent at a later stage the development of the stronger feelings which, at least in our country, are held to form the best basis for the marriage tie. On the other hand, in its imperfect form, co-education may develop prematurely a sentimental interest in the individual and personal aspect of marriage. This, however, should be the last to assert itself. The development in girls during school life of the protective instincts which underlie motherhood should be the chief aim.

Plato's arguments for co-education assumed that difference of sex was of the nature of an accident and therefore negligible. The modern view (the biological view) is that sex difference is the most fundamental factor in human life, and that it may be traced in the mental and moral spheres as well as the physical sphere. If the truth of this be admitted, it is impossible to resist the conclusion that the outlook and methods in the education of men and women should not be identical. When a different curriculum

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for girls ceases to be regarded as a sign of their intellectual inferiority, there will be less reluctance to abandon uniformity, which has in many cases proved unfavourable to development.

Whilst the strength of the biological argument cannot be denied, care must be taken to discriminate between qualities in women due to biological factors and those due to environment. A useful check to dogmatism will be found in the consideration of the extraordinary modification in the outlook and pursuits of women during the last fifty years. Some such survey is moreover necessary as a preliminary to framing schemes of education for the future.

The type of womanhood recognised as representative of the early Victorian age is a kind of crystallisation of historical tradition. Seclusion, restraint, concentration within a narrow sphere, are ideas which for many generations have retarded the natural and free development of women. An attitude of dependence, unfamiliarity with the harsher features of life, lack of intellectual curiosity and of mental attainments, docility in accepting guidance, were considered pleasing features in women of the better classes. A delicate frame, and exclusion from most outdoor activities, were regarded as necessary elements of womanly charm. Devotion to the home was interpreted as involving indifference to the wider interests of citizenship. The type at its best was marked by delicacy and refinement, by strong (if somewhat narrow) affections, and by a certain social charm which from its reticence and its expression of a single point of view bore some analogy to the



products of the fine arts. A much richer development resulted where the social status was such as to make active participation in household activities imperative. Domestic arts, before the introduction of co-operative methods of production, called for the exercise of intelligence and organising power. Capacity, however, did not deliver women from subjection.

Compare with this sketch the present day girl, disregarding for the moment temporary modifications caused by the War. Under favourable conditions she has attained to a higher standard of health and physical development. She is free to devote herself to the higher learning or to practical pursuits. Whatever sphere of action she may select, her knowledge of life and thought is greater than would have been considered "becoming in a young woman" of the old régime. In social relations she enjoys much liberty, and selfreliance has taken the place of diffidence. In speech and manners she is often abrupt and casual. There is great impatience of control and discipline, and strong assertion of the right of individual judgment. In the home, the girl of the present day may at the worst show insubordination; at the best, warmth of feeling often takes the form of affectionate disrespect. The pressure of modern life has left little time for the observance of the rules of old world courtesy. Little or no expression of respect or consideration for older people is exacted of the young. It is not easy to detect in them the spirit of reverence either for institutions or individuals.

Writers of the type of Mr. Arnold Bennett hold up for our consideration the cruelty of the young, and

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represent them as relentless supplanters of the older generation. There is probably exaggeration in such a suggestion, as there is caricature in Mr. Bernard Shaw's portrayal of the working of the life force in girls. The truth underlying such works of fiction appears to be the development in women of a larger measure of self-consciousness, and of a stronger impulse to initiative and self-expression. Where the individual aspect of this tendency is prominent, there may be weakening of the family tie, and indifference to the recognised sanctions of family life. Further disregard of established usage may be found in the frankness with which racial and sex problems are now discussed by the young. Scenes are introduced in modern fiction where the young daughters of a household indulgently refrain from discussion of modern plays until the withdrawal of their mother removes the necessity for extending consideration to prudish scruples—an exaggeration no doubt, but a significant one!

The War has in individual cases caused a reversion to earlier ideals of womanly service. Its main effect has, however, been to secure the economic independence of women, and to establish their right to share in the privileges and responsibilities of national service. The younger women of the nation have attained to a maturity impossible under normal conditions. Their numerical preponderance after the War, their temporary superiority as regards physical fitness, their new political powers, will make them a great, if not the greatest, factor in the destiny of the coming generation. In a recent volume the late Mr. Benjamin Kidd has established by an interesting

line of argument the thesis that the influence of women's mentality will be the leading feature in the next phase of social evolution. The idealism of women, at the core of which is their racial impulse, enables them, he considers, to remain steadfast to aims which can be realised only in the remote future, and to resist the allurements of temporary or individual gain. If this prediction be fulfilled, it will probably be when the present period of transition in women's development has come to an end, and when a new and wider outlook is combined with the revival of certain womanly qualities temporarily submerged. The special fitness of the young women of the present day to meet times of stress and strain must have struck all close observers. They have strength, initiative, and devotion. It is, however, of the first importance that they should take a serious and intelligent view of their future responsibilities, and that they should not be led away by party catch-words or fanatical aphorisms. They should be brought to recognise the need of co-operating with men in all that concerns the general good, and of refusing to be swayed by merely sectional interests.

We pass now to a more direct consideration of the problems of secondary schools, especially in relation to girls. We have already seen that secondary education owes its special importance to the fact that it may count on a certain ripeness of intelligence in those who pursue it, and that in the majority of cases it is the last stage in the preparation for the activities of adult life. The secondary schools are

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to-day, owing to changes of standard, doing work which a generation ago was left to the universities. Much of what Newman said regarding the "Scope and Nature of University Education" might now be quoted as expressing the aims of secondary schools.

"A University training," he tells us, "is the great ordinary means to a great but ordinary end; it aims at raising the intellectual tone of society, at cultivating the public mind, at purifying the national taste, at supplying true principles to popular enthusiasm and fixed aims to popular aspiration, at giving enlargement and sobriety to the ideas of the age, at facilitating the exercise of political power, and refining the intercourse of private life. . . . It shows a man how to accommodate himself to others, how to throw himself into their state of mind, how to bring before them his own, how to influence them, how to come to an understanding with them, how to bear with them. . . ."

When the object of education is stated in terms of social efficiency, as in Newman's essay, the importance is at once apparent of the indirect forces in school life. These are the agencies which mainly determine what is known as the tone of a school, and contribute to the formation of character. The school building itself should be carefully planned. By its beauty and simplicity, and by its perfect adaptation to the end it has to serve, it should provide those within its walls with a standard which will make architectural ugliness distasteful. The susceptibility of children to sense impressions, the lasting power of early associations over mind and character, have been convincingly stated by Pater in his *Child in the House* and implied by Margu  rite Audoux and by other students of child psychology.

Within the building, the classrooms should be sunny and spacious, and should contain pictures or other decorative objects. The pupils should be encouraged to beautify them with growing or cut flowers, and in other ways. Even in schools situated in large towns there should be suggestions year by year of the seasonal drama of plant, and, to some extent, of animal life. It is obvious that matters connected with the adornment and order of the school building are specially important in the case of girls, many of whom will in later years become the centres of family life.

These material aspects of school buildings, however, must be indissolubly linked with spiritual ideals and associations, if they are to exercise a lasting and beneficent influence upon character. Great historic schools have an advantage in the strength of their appeal to the imagination. They have, it may be, periodical ceremonials in perpetuation of the memory of the founder, or of occasions of historic interest; they are linked with the past by traditional usage, and by a roll of names long enough to bridge many generations. But schools which have no such initial advantage have within reach all the materials for building up a noble tradition. By records on the school walls showing the achievements of former pupils, by rolls of honour or memorial tablets, it is possible to bring the young into touch with the great spiritual forces which find expression in material things such as stone and lime, and which vitalise institutions. Such influences should be available for rich and poor alike.

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School prayers, the school motto, the school magazine, the school song or hymn, may all contribute to the formation of a spirit of loyalty and devotion and of ready service. The weaknesses of the individual scholars are reinforced by the existence of a school standard of honour, courtesy, strenuousness, and respect for law. The common element underlying the different agencies named will be found to be a kind of symbolism; and symbolism seems to be a necessary element in the development of the more ideal feelings.

Books of reference, suitably housed, should be provided in all secondary schools, and lighter books for recreation. School societies are important factors in education. They provide opportunities for learning the ordinary rules of business procedure, as shown in the drawing up of constitutions; the keeping of minutes, and so forth. Debating societies, nature clubs, athletic clubs appeal to pupils of different temperaments. They all serve to develop self-confidence, initiative, and ability to work with others. They often lead to the taking up of hobbies which are a source of pleasure and profit throughout life. Girls certainly need business training. They should also have opportunities at school for organising simple social gatherings and promoting charitable enterprises, directly or indirectly. The school charities not only give occasion for personal service and selfdenial; they accustom the young to the idea of social solidarity and responsibility. The conception of duty is no longer confined to the individual or the family, but takes account of citizenship and the far-reaching claims of country and humanity.

As regards school discipline, there is now general agreement that the system adopted should give the older pupils some responsibility and control. The appointment of prefects and of society and club officials gives effect to this principle. In this connection two points must be observed. The inexperience of the young, their limitation of view, their tendency to hasty conclusions and drastic action, make it necessary to guard against oppressive rule in any sphere where they have authority. Moreover, premature imposition of authority and the demand for the judicial attitude in boys and girls may be an undesirable anticipation of the characteristic qualities and responsibilities of adult life.

In considering the question of girls' education in Scotland, it is impossible to disregard the fact that it has suffered in some respects from the position of comparative subordination assigned to women under the existing system. The general direction of girls' education has hitherto been under the control of men, and there have been few inducements to women teachers of the first rank to accept posts in Scottish schools. The difficult questions connected with alternative curricula for boys and girls are not likely to be satisfactorily solved until the headships of more secondary schools are thrown open to women, and until they have opportunities as organisers of devising and carrying out educational experiments. Their adequate representation on the inspectorate is a reform which has been too long delayed.

The indirect educational forces to which reference has been made, have their main application in the

formation of character. They are most powerful when included in a general scheme of what may be called (in the wide sense of the term) religious education. If we reject all non-essentials, we shall find that religious education has at least three objects in view. (1) It seeks to develop in the young reverence for law in the natural and spiritual worlds, and the ability to face without flinching the sterner facts of life. (2) It prepares the way for an interpretation of life in which the love of God is the central conception. (3) It aims at securing the abandonment of the selfish point of view, and the substitution for it of some form of devotion to others. The quest of truth, the love of God, the claims of humanity—such are the chief ideas underlying religious education. As regards the question of dogmatic religious instruction the view here taken is that, in the public schools of this country, stress should be laid upon those elements in Christianity common to various forms of sectarian belief. The different churches representing different tenets must be held responsible for imparting such theological instruction as is considered necessary for the full understanding of religious truth.

Passing over two earlier stages, where methods of religious instruction must take account of what might be called the imitative and the selfassertive phases in child development, we reach the important period of adolescence. Two stages may be distinguished, which normally lie between the ages of 15 and 19. The period of early adolescence is often a time of moral awakening; ideals are formed and thought begins to play on the problems of life.



The social self is evolved, more definite plans of life take shape, and interest is often aroused in poetry and art. In the later adolescence the more thoughtful attitude towards life often leads to the questioning and testing of religious beliefs.

Religious instruction given during early adolescence should combine depth with freshness. The old truths should be presented in new lights, and in relation to the fuller intellectual life which is unfolding. Psalms and hymns carry a more inspiring message when something is known of the part they have played in human experience. The prayers of men and women known to history (Lady Jane Grey, Sir Philip Sidney, Dr. Johnson, etc.) are fitted to impress upon the young the reality and intensity of the inner life. Poetry dealing with religious topics—as in the works of Tennyson and Browning for instance—may serve the same end.

The study of the text of the Bible should be rendered attractive by all the aids which scholarship, literary insight, and moral enthusiasm can offer. These involve accurate knowledge on the part of the teacher of the historic background of the Bible, and some insight into recent critical methods and results of research. Difficulties in accepting traditional forms of religious teaching may present themselves to the more thoughtful scholars of secondary schools. Questions may arise in connection with variations or discrepancies in the Bible text. The spirit of inquiry must not be stifled or condemned. The direction in which the solution of difficulties must be looked for, can often be suggested by a teacher of discernment

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and religious bent. He can also dissipate many prejudices, and inculcate tolerance as regards differences of belief and practice. To trace in the Bible, viewed as a spiritual history of the Jews, the gradual unfolding of religious truth and the elevation and purification of moral standards, is to find an escape from perplexities which have burdened the consciences of many generations of young people. They cease to expect in all parts of the Old Testament the ethical outlook of the New.

Direct moral instruction, as distinct from religious instruction, finds advocates among thoughtful people. Its subject matter is however somewhat abstract, and may be found dull and unattractive unless it is handled with exceptional skill. The indirect method of moral instruction is generally found to be more effective. History and literature supply valuable material for the discussion of problems of conduct. If this takes place without too obvious an obtrusion of the didactic purpose, it may help to form the habit of reflecting upon moral questions. Ethical analysis should however be sparingly resorted to in the education of the young, whose views about right and wrong should have an emotional tinge.

The cultivation of aesthetic feeling in the young has already been referred to as important. The place of Art in education has in the past received too little consideration. The term "Art" has in the school course usually stood for instruction, more or less perfunctory, in drawing and painting. The particular attitude of mind specially characteristic of the artist (Croce's "intuition") may however arise in con-

nection with music, rhythmic movement, poetry, and so forth. Those who are responsible for teaching subjects such as those named, are often ill equipped for their task. Their qualifications, satisfactory perhaps on the practical side, rarely include any knowledge of the psychology of Art, or of its importance for spiritual development. This weak point in equipment is happily coming up for consideration in connection with schemes of educational reform. Co-operation between universities and technical colleges in the training of teachers of special subjects seems to be necessary.

From what has already been said, the importance will be evident not only of surrounding the young with beautiful objects but of leading them to appreciate beauty of sound and movement. They should not be limited to one mode of artistic consciousness and expression. All poets, as we know, are not artists or musicians. Eurhythmics and dancing are useful for artistic as well as physical development; what is called "style" in games has similar importance. The love of the beautiful in dress gains much by detachment from personal love of display.

The importance of physical culture is generally admitted, and needs no emphasis here. It should include a system of effective medical examination and the provision of facilities for outdoor games. The large numbers found in many secondary schools make it impossible to give the individual oversight desirable in the critical years of development. Some progress has however been made, as is evident in the

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increased height and weight of girls, and in the gradual adoption of new standards of female beauty which show no traces of what Mr. Reginald Roper calls the "oriental type."

Some reference must in this connection be made to the question of definite instruction in the facts and hygiene of sex. This is important in the interest of the individual and as a preparation for parenthood. Opinion is now generally favourable to some enlightenment being given, at least to boys, at the age of adolescence. Various views are expressed as to the part to be taken in the matter by the home and the school authorities. The case of girls has always presented difficulties, and there is still in many quarters unwillingness to anticipate in their case the teaching of experience. The policy of silence is sometimes advocated out of respect for sound psychological principles; it is often the outcome of a conservative attitude due to prejudice. It seems clear, however, that changing social conditions have rendered instruction in certain elementary facts necessary as a means of protecting girls and young women from dangers incidental to the freer conditions under which they will live.

In all matters connected with racial feelings the aim should be to make the ideal elements predominant, and to impart the necessary knowledge of facts with the simple directness and the impersonal detachment of a teacher of science. Preparation for receiving such specific instruction in, say, the last two years of school life should be of two kinds. There should be, on the one hand, the reverent and sympathetic

presentation of the aesthetic and moral aspects of family ties. Girls should become familiar with the poetry and pathos of the great love stories of history and literature. They should learn to admire master-pieces of pictorial or plastic art inspired by them. By such means the great central facts of life will be surrounded by noble and inspiring associations.

On the other hand there should be the biological approach to such subjects. Nature study, which is of great importance here, has now a recognised place in early education. It makes the child familiar with the romance of animal and of plant life, and prepares him to accept reproduction as the great central fact of the cosmic process.

Where girls are concerned, some instruction would most naturally be given by the mother. This might be supplemented by the indirect lessons in the science room, and later by direct teaching from the school doctor if she were at once sympathetic and sensible. The effect of such instruction, if successful, would be to leave untouched the instinct of personal reserve (akin to that which distinguishes the more intimate religious feelings), and at the same time to place the physical fact of reproduction in its proper place in the material order.

It does not fall within the scope of this article to discuss in detail alternative curricula and schemes of study. A few general principles may however be stated. The impossibility of finding time during the school course for all subjects of educational importance, and for a reasonable amount of leisure

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and recreation, has made it clear that labour saving must be practised wherever possible. The general adoption of the decimal system, of some measure of spelling reform, of uniformity in grammatical terminology, and of methods of teaching and learning which accord with the recent findings of psychological research, would set free much time and energy which at present are wasted.

As regards organisation, the secondary school has to overcome certain difficulties connected with the different types of scholar for which it has to provide. These include pupils trained in its own preparatory department as well as those who have received their early education in private or elementary schools, or who come from abroad. These different elements must be unified in all that concerns discipline and instruction. A specially able staff, possessing academic distinction and educational insight, is necessary to secure success. Specialist teaching should be combined with the duties of class masters or mistresses. This would secure careful attention to the development of individuals. Special classes should be arranged for backward pupils.

The word "curriculum" suggests old controversies which appear happily to be becoming less acute. Official reports which have recently appeared show that language and science specialists are prepared for compromise as regards the claims of their subjects. From the point of view of school education it is important that some instruction should be given to all pupils in both science and languages. At a later stage specialisation in either of the great departments

of human knowledge should not exclude participation to some extent in the point of view of the other. The study of language is inadequate unless it be pursued with more than a little of the scientific spirit ; the study of science becomes narrow if it takes no account of the bearing of its discoveries upon human life and thought.

The intermediate examination of the Scottish Education Department marks the end of a uniform course which includes the study of languages, mathematics, science, and drawing. Whilst this is sound in principle, the curriculum would be more fruitful in the case of, at any rate, one section of girls if freedom were given to substitute some practical domestic instruction and a simpler mathematical course for the mathematics at present professed. Such an alternative scheme might take effect after one year of the intermediate course.

The stage at which alternative curricula are most important is during the last three years of school life, from 16 to 19 years of age. The existing regulations of the Scottish Education Department do in fact provide for the submission of an unlimited number of secondary courses. Experience, however, shows that recognition for the purpose of leaving certificates is not always accorded to schemes valuable from an educational point of view.

The various callings to be followed by girls on leaving school must to some extent determine the courses adopted. There must obviously be a university course or courses, admitting of specialisation in various groups of subjects to be studied later at the

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university or medical colleges. There should be a domestic course, comprising theoretical and practical instruction in home arts as well as purely cultural subjects. This would prepare for life at home, or for work connected with housing, child welfare, or other social activities. The need for some form of commercial or secretarial course has been evident since women have had to take up work in offices and commercial houses.

The point here to be emphasised is, that courses of the last named types should not be, or have the reputation of being, easy options to the course which gives access to the university. There is no difficulty in drawing up exacting programmes for the study of domestic or business problems, but the absence of prestige or official recognition is sufficient to prove a barrier to the success of the most skilfully devised schemes. Co-operation is needed between universities, central institutions, and secondary schools, in order that there may be adjustment of interests and points of view which at present conflict.

The conclusions reached in the course of this inquiry may now be summed up. The general aim of education should be to place before the young a conception of life in which material wellbeing is not accepted as a worthy criterion of its value. They should be taught to aim at the realisation of spiritual ideals, in which the chief elements are the love of goodness, the love of beauty, the love of truth. They should be led to recognise that the foundation of all worthy human activity rests upon a religious attitude



towards life ; the inner harmony must find expression in the effort to banish discordant elements in the action of individuals and of society.

The special aim of education may most fitly be expressed in terms of social efficiency. This aim should be clearly recognised and have effect given to it in the organisation of schools. A school should be regarded as an organic whole, achieving its ends through the interaction of its parts. In the interest of the whole there should be close co-operation among the constituent groups, and sustained effort to raise the standard of individual development. The contact in school, informal as well as formal, with men and women of distinction, together with increased freedom for selfdevelopment, should promote in the young initiative and creative activity. Their lives as individuals should ultimately be a noble contribution to the life of city and state, and in them family affections should broaden out into love of country and universal goodwill. Whilst the immediate consequences of the War will make it desirable to lay special stress on the humanistic side of education, the ultimate aim must be to maintain the balance between linguistic and scientific studies.

Where women are concerned, there must be the removal of artificial restrictions such as in the past have limited their outlook and their opportunities. There must, however, in the interest of the race, be a clear recognition, influencing both subjects of study and systems of discipline, of the responsibility involved in the diversity of function corresponding to difference of sex. In the moral sphere, the capacity

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for inspiring, beautifying and consoling must not be weakened by neglect of humanistic studies. Some means must be found of combining breadth with depth, and of making the sympathy of women more penetrative by substituting the insight based on wider knowledge for that derived from the narrow experience of the individual life.

## V

### MORAL AND RELIGIOUS ELEMENTS IN THE SCHOOL

THE scope and treatment of this subject will to a large extent be conditioned by the view that is taken of the aim and purpose of the school. While opinions differ regarding the latter, the diversity is often more apparent than real, and is not seldom a difference of degree rather than of kind. The view here advocated is that the school is a place of preparation for life, and the education given there a training for the larger and fuller social sphere outside the school. The conception of education as a preparation for life is no new one; it is at least as old as Plato. Among other things it implies definite and clear ideas regarding life, or rather, to adopt Herbert Spencer's words, the business of life; and also some knowledge of child nature, and the possibility of training it for this purpose. Moreover, it emphasises the intimate connection between the school and its social environment, and points to an interaction between them of great import to both. It also brings the school into direct relationship to the broad stream of civilisation, apart from which it

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has no *raison d'être*, and it gives a rational explanation of the necessity for a constant revision of our ideas regarding the processes of education. What is of equal importance, it makes clear the essential and fundamental connection between a man's philosophy of life and his views on education.

Our first object, then, is to try to fix our ideas regarding the business of life, for upon our conception of this will depend our views as to the preliminary training in the school. At the very outset we are met with difficulties. What is conceived as the business of life is, to a large extent, conditioned by the conception of the aim and purpose of life itself, and individual views regarding the latter differ widely. A materialistic view would emphasise the physical and intellectual, whereas a spiritual would lay stress upon the moral and religious. It is precisely this emphasis or stress on particular aspects of life which makes the problems of education or training for life so difficult. If mankind were at one regarding the end or aim of life, the training in the school would naturally be directed towards it, and these problems, although not solved thereby, would become relatively simple. Thus, during the Middle Ages, when the conduct and direction of education were exclusively in the hands of the clergy, the task of the school was greatly simplified. Otherworldliness was the keynote of the training, and the studies in the school were oriented in that direction. But the simplicity of aim, so characteristic of those days, has given place to a complexity which has increased, *pari passu*, with the complexity of modern civilisation. Some, with John

Locke, would follow Juvenal and emphasise "the sound mind in a sound body" as being all essential in life. They urge that, at the present day, the importance of a sound body does not require to be argued. A skilful eye and hand ought to be the birthright of every child, and a training which does not lead to this is lopsided and lacks balance. Their view is that the training of the physique should be such as to develop thoroughly fit and useful members of society, capable of efficient service in some occupation in life, "sa that," in the words of John Knox, "the Commounwealthe may have some confort of them." Others, again, would emphasise the intellectual element as of primary importance in life. By means of a selective study of the accumulated experience of past generations, organised as it is in various departments of knowledge, they would have the child win for himself, through a properly directed system of training, not only a substantial amount of knowledge of real and intrinsic value, but also the power of acquiring knowledge, which is of infinitely more importance. To treat the mind as a storehouse of facts—so they rightly argue—is one thing, but it is another to train it to be receptive and adaptable when faced with the new facts and experiences which a progressive civilisation creates. Then, again, a third class emphasise the moral and religious elements in life, and naturally look to a training which will develop in the child clear ideas regarding right and wrong, and high ideals of life and duty, such as accord with the best of those which inform the social environment about him, and are in consonance with the best of those which have

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approved themselves in all ages. They maintain that, in relation to the concrete facts of life, these ideals should express themselves in the form of good habits, and particularly in that command of oneself so essential to an ordered existence in a complex social *milieu*. The latter claim, it may be said, has a further consequence in that it entails upon the individual the necessity of acquiring some rational knowledge of his position in the social sphere; by which is meant not simply a knowledge of social relations with respect to immediate environment, but of social relations with respect to the State and the world outside the State—a series of relations comprehended in the terms civic, national, and international.

Thus to determine precisely what is the business of life is not a simple matter. The root difficulty is the age-long question of the aim and purpose of life itself, and the answer to this, as already indicated, depends upon the point of view of the individual, and varies accordingly. This is simply another way of stating that a man's philosophy of life is his own. But if it is assumed that what gives the prevailing tone and colour to a man's life is his moral and religious ideals—and in this assumption we believe that the majority of mankind is at one—it is evident that, to be consistent with our theory regarding the aim and purpose of the school, the preparatory training there must be permeated, through and through, with moral and religious influences. This is a view which many eminent educationists have taken in all ages. Herbart and Hegel, for example, looked upon morality as the end and aim of all school educa-

tion. More recently we have one of our distinguished educationists, in advocating the inclusion in the school curriculum of some direct moral instruction, founding this plea upon the fact that "men and women need the inspiring force of a clearly apprehended religious and moral ideal." Professor John Dewey, too, is clear as to the "necessity of discussing the entire structure and the specific workings of the school system from the standpoint of its moral position and moral function in society." While it may not be possible to inculcate the highest ideals of life and duty during the period of school life—for to a certain extent the apprehending of some of them depends upon a maturity of mind not attained in the school—it is possible to direct the training there in such a manner as to lead the pupils well on the way towards the desired goal. Our conclusion on this point must, therefore, be that, important as they are, physical and intellectual training, apart from moral and religious training, are totally insufficient as a preparation for the business of life. Hence the school ought to be essentially a moral institution, and its chief end and aim to instil such noble ideals of life and duty as will express themselves in conduct of the highest type. If this view of the school had been universally adopted in the past, there would be no occasion for the lament, so often expressed, of the divorce between intellectual and moral training.

As a moral institution the school will concern itself with training and instruction in the principles of right conduct. This may be expressed in another way: Since conduct is the outward and visible

manifestation of character, the school may also be described as concerned with the formation of character. Indeed, it is a commonplace to define this as its chief function. Now character and conduct are the product of many factors—the home, the school, the Church, the community, the State. The list is not exhaustive, but it will suffice to show the complex of influences which share, in varying degrees and at various stages of child life, in the development and formation of character. All these influences are at work upon the growing child, directly or indirectly, and, in any investigation or analysis of factors contributory to character, must be taken into account. But since these influences do not, in general, act independently of one another, it is not easy to assign to each its precise share in the resulting product. The influence of the Church, for example, may be both mediate and direct. It may act, and generally does, through the school and through its own particular agencies at one and the same time, and it does not follow that the effects of its influence are the same in both cases. Similarly with the others. In considering the possibilities and limitations of the school, and particularly the day school, as a moral institution, this fact assumes considerable importance. Then, again, since the child does not attend school for the first few years of its life, the home and the immediate social environment have already brought their powerful influences to bear for several years before the moral forces of the school come into operation. And these early influences of home and social environment are often ineradicable and not



seldom the reverse of good. Thus, again, the task of the school as a moral institution is not lightened nor its possibilities increased. While, therefore, it is maintained that the chief end and aim of the school should be the formation of character—the character which manifests itself in right conduct—it would be unreasonable to attribute failure to achieve this end entirely to the school; and more particularly is this so in the case of the day school, where the pupils attend during a relatively small portion of the day.

The education which concerns itself with the principles of right conduct and the development of character is essentially moral education. While its aim is one, its methods are many. It may work directly or indirectly, through the home, the school, the Church, or other social agency. The influences which go to form character operate from the day the child is born, if not before. Our object, however, is limited to an examination of those moral influences which operate through the school. In general they may be classified as social and intellectual, although the division is by no means absolute. For the present purpose it will be simpler to examine them from the point of view of (a) the school as a community, (b) the teacher, and (c) the school curriculum.

(a) As a community, the school exercises an undoubted moral influence upon its members, and failure to appreciate this, it may be added, was a cardinal defect in Rousseau's scheme for the education of *Émile*. The school is a link between the home and the social world. In the family the relation-

ship is personal and individual and characterised by affection and love, whereas in the world at large sentiment may in the first instance be discounted. The man is judged by his worth in the society in which he moves and according to the standards which prevail there. The school is midway between the family and the world, and, in consequence, the child while at school is not exposed to the full force of life, and, to a certain extent, is sheltered from the worst effects of the penalties of wrong action. At the same time, if the school is to function as a place of preparation for the business of life, the motives of conduct, when the child is old enough to understand motives, should be analogous to those of the adult, and the standards by which he is judged should, with like limitations, be also similar. To talk of the school functioning in this way is meaningless except in so far as the binding character of right conduct as interpreted by the school is the same as understood in social life generally. The school is essentially a moral agency ruling with firmness and justice; and its routine discipline, founded upon accepted moral principles, is subconsciously, but none the less truly, a powerful instrument in furthering the intellectual and moral progress of the child.

Notwithstanding the many differences between the various types of school—day and boarding, elementary and secondary, public and private—there is one thing common to them all, each is in itself a miniature world. Each has its own rules and regulations, many have their own peculiar traditions, and not a few possess treasured memories which extend

back over centuries. This is the ordered microcosm into which the child enters and to the practices of which he must conform. It is an atmosphere in which law and order rather than love and sentiment predominate: In many respects it is a replica of the larger world outside. In its laws, rights, privileges, and duties it reproduces on a smaller scale the elements which enter into the texture of the moral life of the adult. But there is a difference. In the school the moral consciousness is in the making; in the world it is assumed to be made—anyhow to a large extent. Moral consciousness has an organic development in the spiritual life parallel to that of the body in the physical. Selfcontrol is not a spontaneous growth attaining maturity all at once; it is the product of repeated inhibitions, external and internal, extending over many years. The gradual growth of the moral life, through the active co-operation of a developing selfconsciousness, leads, as Hegel says, to self-government and real freedom. Now the school community, directly and indirectly, lends itself to this development. Selfwill is instinctively subordinated to discipline, a sense of rights and duties is developed, social instincts are aroused, and, if properly directed, may be utilised in social service. All this, however, comes gradually. Obedience, well named the first as well as the last of school virtues, is with the young child something imposed upon him, from without. But when he has reached the stage of conscious reflection, in which he can understand the significance and necessity of obedience in an ordered community, it assumes a different complexion and becomes an

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obligation imposed from within, as do other school virtues—punctuality, methodical habits, industry, neatness, and the like.

The school community in its higher reaches offers further scope for character-building. Arnold of Rugby knew this and, acting upon his knowledge, left a distinctive mark upon the English public school system. Selfgovernment and selfdetermination are essential to the development of the moral life, and the important question is, To what extent can practice in them be given in the school. There is always a danger lest the intellectual side of moral education should be unduly emphasised; the real corrective is the proper development of selfactivity with a view to moral growth. The well known saying of Aristotle that man by his nature is a political animal has a certain amount of application to the school, and it would be well if this were recognised more generally. There are endless ways in which the spirit and the letter of selfgovernment can be applied in the school, irrespective of the type to which it belongs. Nor is it necessary to expect that, in exercising this power, the pupils should invariably act with sound judgment. Provided the consequences are not serious, it might be to their ultimate advantage to err occasionally. The important fact is that, if there is to be growth and development of character, there must be some opportunities for free and independent choice, and the school community offers in an unusual degree many such opportunities.

But the communal life of the school does more than this. It affords possibilities of deepening and

broadening the moral life through the intercourse of pupil with pupil. The influence of this upon the formation of character is a commonplace and requires no elaboration. In the day secondary school, in particular, where there is usually a mingling of pupils drawn from many grades and classes of society, a tendency to diminish class feeling and class intolerance is fostered. Mutual respect and toleration take the place of those prejudices which tend to split society into strata. In many instances friendships are formed of lifelong duration and value, and opportunities are afforded for cultivating the virtues of sympathy, selfsacrifice, charity, and the like. Nor must the ethical value of school games be overlooked, although excessive devotion to them might easily defeat their moral aim. The give-and-take, the co-operation, the selfcontrol, the *esprit de corps* which accompany them, are all valuable in building up character. Out of the communal life of the school spring school clubs and school societies with all their varied interests and ramifications, more often than not the foundation of that right use of leisure so necessary to the moral life.

(b) The influence of the teacher in moral education is unquestionable, and it is exerted both directly and indirectly. Just now we are more concerned with the latter, and particularly from the point of view of discipline. To the pupil in the school the teacher is the embodiment of moral law, just as the parent is in the home. His character, personality, habits, outlook on life, exercise an influence, often profound, upon the life and character of his pupils. The child has a natural impulse to imitation, and, in

consequence, whatever in the character of the teacher appeals to him, will tend to be reproduced in his own, though probably it will be unconsciously. The teacher is, or ought to be, his superior in character, and the influence of a moral superiority is a marked feature in any walk of life, but most assuredly so in school life. The power of example is perhaps nowhere so evident as in moral education. With young children particularly, the teacher's judgment in moral questions is accepted implicitly; it is as weighty as the Ten Commandments. Such being the case, it is not a matter of wonder that writers on education in all ages have demanded a high standard of qualifications in the teacher, and, not infrequently, an almost impossible one. That he must be sympathetic and very human, if he is to gain the confidence and affection of his pupils, is obvious. Further, however much he may possess such qualities of heart, he cannot influence the life and character of his pupils to the fullest extent unless he is competently prepared for his work, and the pupils in his charge are limited to a reasonable number. Apart altogether from the very important factor of personality, a properly trained teacher and small classes are absolutely indispensable for moral progress in the school. Nor must we omit reference to the fact, which, indeed, should require no formal statement, if the nation were alive to its own interests, that an underpaid teacher, with its corollary, an ever present sense of injustice, is bound, in the long run, to be inimical to moral development and progress in the school.

(c) Turning to the curriculum we are met by

questions which may be answered in more than one way. The view that any school subject, if sound in matter and in method of treatment, has distinct and positive ethical import, has much to commend it. But the moral effect will vary with the subject and the treatment. For example, history has a greater moral content than mathematics, and mere rote learning, apart from the substance of what is memorised, is not fruitful in ethical results. Still less so is an educational system which exalts the importance of examinations, with their tendency merely to foster ability to reproduce subject matter. The plan, too, which looks to prizes and material rewards as incentives to industry, may raise up false gods, reverence for whom is not in the interests of morality. Then, again, there is no general agreement regarding the subjects which should be included in the curriculum. Why some subjects are included and others excluded, is one of the puzzles beyond the solution of a mere schoolmaster! While tradition is undoubtedly responsible for much of the curriculum, it is the fashion in modern times to ignore this and to speak of values—cultural, disciplinary, informative—as if they were absolute and independent of one another, which they are not. It is unfortunate that there is no generally accepted criterion or standard of value to regulate the school curriculum. If subjects were chosen with a view to preparing a pupil for the business of life, *i.e.* to give him the best possible training for his future position in society, there would be less need than at present for the many apologies for the curriculum.\* The increase in recent years in the number

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of school subjects is not in itself reprehensible ; it is the dissipation of energy, seemingly one of the usual consequences, that is the deplorable thing.

- If one could be certain that a pupil would, in whatever he did, put his whole heart into his work, not to say grow enthusiastic over it—a not uncommon occurrence under a gifted teacher—there would be less reason to cavil at the multiplication of subjects; for after all it is the attitude of mind, the striving, which counts, and not necessarily the achievement in any particular subject. If a subject contains matter worthy of being taught, and if it is taught on sound lines, it will have ethical import, and, in the hands of a teacher with a strongly developed moral sense, can be made to serve a distinctly useful purpose in character building.

To accept the time honoured division of school subjects into humanistic and scientific groups, although at best only a rough classification, will be convenient for our present discussion. In the one group the distinctive subjects are literature and history ; in the other, mathematics and science. A subject like geography may find place in one group or the other according to its method of treatment, and similar considerations will affect the classification of numerous other subjects. The humanistic group, dealing as it does with men and affairs, with human thought and action, lends itself more readily to moral teaching than the scientific group, which is primarily concerned with nature, its products, its laws and interactions. In the study of literature there is a constant exercise of the judgment, an ever-present



appeal to wider and deeper sympathies, and a gradual development of the sense of harmony and beauty. The distinction between literature and language may be said to be that between content and form. The training in accuracy and precision of thought and expression in the study of a language is undoubtedly of value in moral education. Perhaps the idea of truth is best developed and cultivated in linguistic studies, although the value of mathematics in leading up to the conception of absolute truth must be conceded. In history the central fact is the gradual but continuous growth of civilisation, and moral progress is its dominant note. In consequence, the opportunities for ethical treatment which history affords are practically unlimited. If the events of the past are linked up with the social life of the present, and the whole treated as an evolutionary process, the moral worth of the study is greatly enhanced. Moreover its insistent appeal to the strenuous life cannot be overlooked. In the scientific group mathematics naturally predominates. In striving after absolute truth, in constantly appealing to reason and thereby establishing its authority, it has an undoubted moral influence. Looseness of thought, inconsequence and irrelevance, partiality and unfairness are anathema in mathematics. In science there is the moral worth of coming to the bedrock of facts, of thinking for oneself and relying on oneself, of connecting cause and effect, all which gives occasion for exercising powers which promote and strengthen morality. Similar considerations apply to nature study, domestic science, and manual work generally. If properly

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taught, all these subjects may contribute in no inconsiderable degree to the building up of character.

The moral instruction which the pupil receives in this way is indirect, and it is obvious that the amount and quality of it will vary with the teacher. But if the school is to function as a moral institution, as we believe it should, much more can be made of indirect moral instruction than at present. Many believe that this method is more permanent in its effect than what is called the direct method. Obviously to a teacher who is sensitive to the moral aspects of his work it presents innumerable opportunities, by suggestion or direct injunction, of bringing home to the pupils in a quiet but penetrating way the essential principles of right conduct.

But as we have indicated, moral instruction may be given in a direct form, *i.e.* by means of lessons on one or other of the moral virtues or the duties of life or similar topics. Those who believe in the force of ideas—and which of us does not?—might naturally be supposed to favour direct moral instruction being given at some stage or other of the pupil's career at school. It seems reasonable that moral ideals, and habits and practices which we call good, and which have perhaps been formed unconsciously and by indirect means, should be brought under conscious reflection and examined and discussed in relation to the moral standards of social life generally; and, further, that this should be done systematically when the pupil has reached the age at which he might reasonably be expected to profit by it. This we take to be, in general, not earlier than the age of 12,

by preference later. With the more advanced pupils such direct moral instruction would naturally include a reference to civic rights and duties and responsibilities and some reference to sex questions. The average adolescent is said not to take kindly to direct instruction in sex matters. If this is true, it is, perhaps, due more to the method of approaching the subject than to any instinctive dislike on the part of the pupils. The methods suggested by the Alliance of Honour, which has done so much excellent pioneer work in this direction, are well worth careful consideration.

This brings us to the question of religious instruction and its relation to direct moral instruction. Since religious instruction is concerned with the same main principles as are basic in moral instruction, the connection is an intimate one, so much so that in practice some find a difficulty in realising how any substantive moral teaching can be given apart from religion. Notwithstanding the close intimacy which exists between them, there are yet important differences. For one thing, the points of view are different, and for another, the sanctions are not identical. These two facts suffice to mark a real distinction. Moral education is directed to the formation of character based upon high ideals of life and duty. This is also an aim of religious instruction. The one seeks to promote its end by instruction in the duties and responsibilities of life, by a training in social sympathies, and by the cultivation of control over the passions ; the other proceeds on the assumption that human nature has a spiritual origin in a

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Divine Being, and upon this relationship, which is definitely expressed in a body of beliefs and truths, bases its teaching. Its ideals and standards are referred to the will of God as their *fons et origo*. Its great exemplar is Jesus Christ, whose personality and character is the embodiment of the highest ideal of the moral life. Moral education, although it has many points of contact with religious instruction, is thus seen in important respects to differ from it.

Now, on the assumption that the school is a moral institution having as its chief end and aim the formation of character, it has been urged above that one of its primary duties is to give moral instruction. The argument for the inclusion of religious instruction in the curriculum is equally imperative. The standard of right and wrong assumed in moral instruction, as already indicated, is derived from the social environment, it is the standard which prevails in current civilisation. But the social environment is only the proximate source; the ultimate must be sought elsewhere, and in seeking this ultimate source we find it in religion. This is a proposition not difficult to establish. It is obvious that the morality of western civilisation is the morality of Christianity. Our ideas regarding moral obligations and responsibilities, universal brotherhood, moral equality of man, conscience and its authority, purity of life, and esteem of woman, all have their roots in the New Testament. The fact, indeed, is not disputed. If, then, religion has been the source of these high moral ideals, of the standards of right and wrong as accepted in social life and in the school, surely, apart from

other considerations, this is in itself a good reason for the inclusion of religious instruction in the school curriculum.

But the logical is not the only reason why religious instruction should find a place in the school. The concrete character of religious teaching is most valuable in presenting moral and religious ideas to children. A personal God makes a powerful appeal to them. Those who have to deal with the young, and particularly with boys, know how futile is the appeal to the abstract and impersonal, and how successful by contrast is the appeal to the personal. If a conscious and living relationship can be established between the child and Jesus Christ, such as to awaken reverence, love, and personal loyalty, one of the most powerful incentives and inducements to the good life is assured. While, in general, the appeal to the personal is almost irresistible with children, there may be, and probably are, some whose minds or temperaments are such that they are not moved by these considerations. Their emotions are not stirred by the religious call, and it may be an appeal to their reason and common sense, and social instincts and sympathies, would have more weight. Such facts as these require careful consideration. It may well be that, for this class, direct moral instruction apart from religious teaching is the preferable method—at all events in the first instance. In general, however, it would seem that direct moral instruction is best given through religious instruction, and largely because of the powerful interest it arouses in the young mind by its appeal to the concrete and the

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personal and all that these imply. There are other weighty reasons of psychological import; for the subject is one which has many facets, did space permit their detailed treatment.

No reference has yet been made to the bearing upon religious instruction of differences of creed or doctrine. Notwithstanding these differences, which are by no means negligible, the main principles of morality are essentially the same in all sects of western Christendom, and, so far as the school is concerned, it should not be difficult to find in religious instruction a common denominator which will satisfy the various Protestant Churches at least. The Bible, of course, would be the basis of any such scheme. It assumes God as the central fact in nature, and bears witness to His mercy, love, wisdom, justice, and righteousness. Its teaching culminates in the Old Testament in the Psalms and the Prophets, and in the New Testament in the personality and character of Jesus Christ and the high idealism He embodies in His life. These are fundamental in all the religions of western civilisation, and could be made the basis of any scheme of religious instruction, apart altogether from variations in formularies and creeds. The historical facts, so necessary for the proper understanding of the evolution of a progressive morality, would be subordinate to the teaching of the essential principles of morality and religion—faith in the spiritual life and the due expression of this faith in right living. The treatment of the higher ideas of religion—sin, atonement, judgment—might without loss be deferred until the pupil reaches the stage of

adolescence. Such a scheme would form the basis of religious teaching in school. Anything beyond this might reasonably be left to the Churches to deal with. At the same time, it is not suggested that the scope of the scheme should be limited to simple Bible teaching. That something more than this is contemplated, will be evident from what has been indicated. It is also assumed that coincident with this religious teaching there would be some simple devotional exercises daily.

The study of the Bible is not without its own peculiar difficulties. It is a history of morality developing through many centuries and progressing from a relatively lower standard to one much higher. Indeed, this very fact helps to make it a unique instrument in moral training. In consequence, human actions, as depicted in the Bible, if they are to be estimated at their true value, should be judged in the light of the standard which prevailed at the time. The recognition of this will clear away many difficulties and serve to explain not a few apparent anomalies. With the older pupils the results of modern scholarship should be frankly accepted, and there should be no necessity for treating all Biblical narrative as literal history. The rearrangement of the Pentateuch, for example, according to historical sequence, and the discussion of the interpolations by later editors, if done in the right spirit, will enhance rather than detract from the value of the study. On the other hand, there seems to be no good reason why the narratives of the miracles in the Old Testament should be excluded. The

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wonderful and the miraculous are a source of great delight to young children, and may be turned to good moral purpose. Provided that at some stage of the pupils' school career they are exhibited in their proper light, there is no reason to debar children from reading and enjoying these narratives. Finally, as a literary study alone the Bible is worthy of a prominent place in school study.

If a case has been made out for the inclusion of religious instruction in the curriculum of every school, it is not to be supposed that the school can take the place of the home or the Church in this respect. While the school can undoubtedly give important help in developing the religious consciousness, this help is in the main of a secondary nature. From the circumstances under which it is given, it cannot hope to have the same influence or weight or permanence as that given in the family circle or in the church. It is important to recognise this. In the boarding school, where the daily life of the pupil approximates to the daily life at home, religious teaching may conceivably become a powerful instrument in school training; but in the day school, elementary or secondary, the alternation of home and school life, with the continual shifting of responsibility, often two or three times a day, effectually precludes the school from taking that dominant position in the religious life of the child which, under other circumstances, might have been expected from it. Indeed, even under the most favourable circumstances, the school cannot wholly take the place of the home in the matter of religious



training. There are elements in home life which are fundamental to the proper development of the religious life, especially on its emotional side. The same may also be said of the Church. Such being the case, it is well to recognise frankly the limitations of the school in regard to religious instruction. The misguided enthusiasm which would attempt to substitute the school for the home and the Church, does not promote the real interests of the religious life.

The relation between school and home is, of course, not confined to those influences which cluster round religious instruction. As already indicated, the same truth holds good in all matters connected with the development and formation of character. The most plastic years of a child's life are passed in surroundings other than the school, and the influences there exerted tend to persist. It is a commonplace that in these early days the foundation of a good or bad character is laid. The significance of this is so obvious that in recent years a movement has been started, which is gaining momentum as it proceeds, to bring the children of tender years from homes where they cannot be properly cared for, to suitable centres where they may have the oversight and attention, moral and physical, which should be the birthright of every child. In this way the school and the home are drawing more closely together, and the general tendency is towards approximation. This is precisely as it should be. The closer the co-operation between the two, the better will it be for the child. In so many ways are school and home complementary to one another that nothing but good can ensue from

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frank and sympathetic co-operation. As compared with the home, the school lays more stress on intellectual studies, and gives relatively less consideration to sentiment and the feelings—affection, love, filial piety, respect for age, and the like. Almost any type of school gives a social training which is not possible in the home; whereas the latter gives that attention to the individual which is scarcely possible at school. In the family the foundation of the moral and religious life is to be sought in mutual affection and love, apart from other considerations which weigh in social life. In the school the moral life is developed in an environment where everything depends upon the worth of the pupil as an individual. New motives come into play. At home he is younger or older than other members of the family; in the school he is among his equals and has to “make good,” and in doing so gains his first insight into the ideas of social equality and the rights of man. Further, there should be co-operation on rational lines between the home and school with regard to such matters as discipline—obedience, punctuality, regular habits,—personal hygiene, the promotion of manners and refinement, selfcontrol, and many other duties and virtues. Perhaps it is too much to expect every home to co-operate with the school in this way, but something can be done in this respect even with the worst type. Indeed, by means of parents’ meetings and similar agencies, much has already been done to ameliorate the condition of the children of the very poor.

The school is a great moral institution, and much,

perhaps too much, is expected of it. It aims at turning out pupils efficient in every sense of the word—physically, intellectually, and morally. It has always claimed to provide an intellectual equipment. But unless it has also fitted its pupils to take their place in the social world, imbued them with a love of virtue no less than of knowledge, and inspired them with noble ideals of life and duty, it has to that degree failed to fulfil one of the main functions for which it has been called into existence.

## VI

### SOCIAL ASPECTS OF EDUCATION

A WORLD wide development of educational thought is taking place at the present time. We are only in the opening stages of the movement, its details are not yet clear, but already it promises to be one of the most important in the whole history of education. There were signs of it before the great World War, but the movement has been vastly stimulated by the general upheaval. The War has led to national heart searching and to far reaching plans of reconstruction and readjustment, the success of which will depend upon the young receiving, for the first time, a really adequate preparation for their future social, political, and economic life. The War has shown the insecurity of the foundations upon which our civilisation rests, and the need of rearing a race better equipped mentally and spiritually than the present, with a higher social intelligence and social character, and a truer understanding of men's relations to each other and of the conditions that underlie the peaceful evolution of the nations.

One of the chief features of the new movement, so far as it has gone, is its social point of view. It

regards education not as a thing apart, but as one of the most important forms of social activity, and the purpose of education as primarily social efficiency and social progress rather than individual development and personal success. This is no novel view. From the earliest times education has had, in theory at least, a social function and a social end. Plato in his *Republic* and his *Laws* taught that the aim of education was primarily preparation for citizenship, and advocated education as the chief means of realising his ideal state. Aristotle in his *Politics* gave expression to similar views, and, indeed, we find a social ideal running through all the great Greek writings on education. Right down to mediaeval times the social view was predominant, but it was held only as a more or less vague theory, and never seems to have risen clearly to consciousness or to have found concrete expression as a practical truth. No workable theory of society was developed, and the relationship between individuals and classes in the social order was but imperfectly understood. Consequently there was a gradual weakening of the social ideal in education, and a corresponding increase in strength of the opinion that the purpose of education is primarily the benefit of the individual. The individualistic philosophy of the eighteenth and early nineteenth centuries strengthened and confirmed this tendency, and the individualistic conception of the scope and purpose of education became more and more prominent until it finally became predominant. Rousseau, Pestalozzi, Froebel, and Herbart, all in their different ways sought to correct the individualistic

bias, and to introduce a social spirit and purpose. The movement now developing in educational thought is due in no small measure to their influence, and one of its achievements, we trust, will be to complete the task they undertook of rendering the social aims of education more conscious and more effective, and securing a due balance between the individual and social factors.

The social instincts in man are fundamental, he cannot live apart from other human beings. Crusoe was able to endure his isolation only by the recollection of the social world to which he once belonged, and by the hope of some day being able to rejoin it. The footprints on the sand were a symbol to him of this social world and revived his hope of ultimate restoration to it. Our whole existence is bound up with that of other people. Cut away the social side, and life is reduced to an empty nothing. Individual excellences have no value or meaning apart from other human beings, and they cannot develop without interactions between us and our human environment. Our wellbeing cannot be separated from that of others, and the common welfare furnishes the test and standard for measuring individual success or failure. Education should aim, therefore, not so much at individual as at social efficiency. A society founded on a purely individualistic basis, a society consisting of individuals made efficient by education solely in their own interests, is almost unthinkable. It could at best be a society founded on the gospel of might, an agglomeration of units engaged in a Darwinian struggle for existence.

Much truer is the conception, which has come down to us from the Greeks, of society as an organism the wellbeing of which depends on that of all its members. But in a living organism the individual members attain their importance only as parts of the organism and by the proper performance of their functions as such. The members may, if necessary, be sacrificed for the sake of the life or welfare of the whole. So it is in the organism of human society; the interests of each member composing it must be subordinated to the larger interests of the whole. The individual may even die that the State may live, as has lately happened in the case of countless thousands of our youths on the battlefields of Europe and Asia. As the late Mr. Benjamin Kidd has pointed out in his very able and suggestive work on *The Science of Power*, the individual who makes most for collective efficiency in the social and moral world which civilisation is evolving, is he who has learned to subordinate his own interests to those of the community. "The progress of humanity has over and above every other feature this meaning. It is the epic of the vast, tragic, ennobling, immortalising, all-conquering ethic of renunciation. The story of creation up to and including human savagery is simply the story of the supremacy in the world of physical force organised in the life of the efficient individual or the efficient group or the efficient state. But the story of evolution above savagery is nothing else than the story of the gradual rise to supremacy in the world of these psychic forces organised in civilisation, which are subduing in-

dividuals or aggregations of individuals efficient in their own interests to those universal principles which are making for the limitless efficiency of civilisation." Mr. Kidd very properly has compared with this the German ideal of the absolute and all powerful state resting on militarism. Bernhardt, for example, asserts that "the Christian duty of sacrifice for something higher does not exist for the state, for there is nothing higher than it in the world's history."

At the present time, then, educational thought, in reaction to the undue stress formerly placed on individualism and selfinterest, is tending more and more to emphasise the social aim of education. The goal of mankind, some one has said, is not so much the exaltation of the superman as the evolution of supermankind. This does not imply the repression of individuality or the levelling of distinctions, for what the world needs is variety not uniformity of individual gifts. The richest asset of the State is the fully developed individuality of each citizen. Further, there is no dualism or fundamental opposition between the interests of self and the good of the world, between the individual and the universal. The interests of society and of the individual are really one, and the education that discovers and trains the distinctive powers of an individual is at the same time that which renders the best service to the social whole.

The faculties of each pupil must therefore be developed, not as if he were being trained to be a selfsufficient isolated unit, but in order that he may



become an active and efficient member of society. In short, the educator's purpose is to train up a social individuality. The harmonisation of the individual and social aims is not always easy, but the achievement of it is at once the problem and the ideal of present day education.

The task thus presented is too great for the school alone. Assistance must be given by the institutions and agencies for informal education—the home, the Church, the vocation, the press, society itself. The educative influence of these is important, but to a large extent undeveloped as yet and left to chance. One of the many problems that the War has bequeathed to us is to utilise them more fully for educational purposes, and to link them up more closely with the national system. But the amount of educational power supplied by each of the different agencies can never be a fixed quantity. In the vicissitudes of social progress, some institutions decrease in influence in the educational hierarchy, while others wax stronger to meet the new conditions. The home and the vocation, in cities at least, do not now exert the same amount of educational and social influence as they did before the industrial revolution. With each change additional tasks are thrown on the school, and so it has risen in importance, until it has grown to be a giant where it was once “a puny babe.” In the simpler life of the past, the child received his intellectual training in the school, and his training in social relations and duties mainly in informal ways outside the school. But now the demands of society on the individual are too complex

for that, and the school has to do something toward fitting the young to meet the new social needs. The school is here undertaking duties that have not been required of it until recent times. In almost countless new ways it is working for the welfare of the community, and its teachers are playing an important part in nearly every movement for the progress of society.

The school is a means of social training chiefly in three ways, firstly through its corporate life, secondly through the methods it employs, and, thirdly, through its studies or curriculum. In actual practice these are closely interwoven, but it may help our purpose and lead to clearness if we consider them separately.

#### CORPORATE LIFE OF THE SCHOOL

Sociability is a marked feature of the young. At every stage they form natural groups for all sorts of amusements and occupations. The very act of collecting children in schools strengthens this instinctive tendency. Yet until quite recent times educational authorities have failed generally to recognise its social significance, and have allowed it to run to waste as an unavoidable but useless by-product of youthful energy. But now, partly from a sense of the danger of allowing the group tendency to develop uncontrolled, and partly from an appreciation of the fact that children require to be trained socially as well as intellectually, it is recognised that it is an essential part of the function of education to

supervise and direct the spontaneous social activities of the young, and to develop these systematically for educational ends. The social work done in our great public schools under the leadership of Arnold of Rugby, Thring of Uppingham, and Almond of Loretto is ample testimony to the importance of suitable organisation for social ends, and what has proved so valuable for adolescents of the upper classes will be hardly less beneficial at the earlier stages of school life for pupils of every rank and class.

We need not describe the forms that the group activities of the school may take—clubs for games, boy scouts, cadet corps, dramatic and debating clubs, camera and field clubs, musical societies, etc. In the selection of one or more of these much will depend upon the circumstances of the school and the interests of the pupils. Except in boarding schools it is exceedingly difficult to find adequate time for the social side of the work, which in consequence overflows the limits of the official time table. But we should be prepared to give up a certain amount even of the formal curriculum if the pupils thereby obtain opportunities of learning not only how to think but also how to live. Moreover, the social life of the school is the soil in which, in a natural way, the personal qualities grow which are the foundation of all character—loyalty, truthfulness, and justice. It stirs at an early stage the sense of human solidarity and human interdependence. It develops in the pupils the spirit of co-operation, of service, and of subordination of selfinterest to the general welfare. If the management of the

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social activities of the school is left as far as possible to the pupils, they receive training in administration and self-direction, as well as in leadership and the power of directing others. These are lessons in social education indispensable for future citizenship. They cannot be obtained from books, they can be learned only in action.

But not only should each school be divided, as just indicated, into a number of groups for social training; it should be a social unit, comprising an actual community in itself, and reproducing in its equipment and activities, as far as may be, desirable features characteristic of the larger society outside. It is the absence of these features that gives the school its artificiality, its narrowness and dullness, and its isolation from life of which so many complain. The school cannot give a preparation for social life unless it reproduces in itself the typical conditions of social life. As Professor John Dewey says in his *Essay on Ethical Principles Underlying Education*: "The school at present is engaged largely upon the futile task of Sisyphus. It is endeavouring to form practically an intellectual habit in children for use in a social life which is, as it would almost seem, carefully and purposely kept away from any vital contact with the child who is thus undergoing training. The only way to prepare for social life is to engage in social life. To form habits of usefulness and serviceableness apart from any direct social need and motive, and apart from any existing social situation, is, to the letter, teaching the child to swim by going through motions outside of the water." The

most indispensable condition is left out, and the results are correspondingly futile."

This defect is steadily, if slowly, disappearing. A modern school with its wider activities and fuller equipment—its workshops, laboratories, sewing room, kitchen, lunch room, museum, library, swimming pond, playground, garden—is, as Mr. Clarence A. Perry has pointed out, "a more complete microcosm of society than is found in any other single institution." A pupil cannot participate day after day in the life and activities of a miniature community of this kind without, in considerable measure, imbibing a social spirit, acquiring social interests, and getting a training for social and practical life in the world.

#### EDUCATIONAL METHODS

We must keep in mind that all educational theory necessarily depends upon social theory. This is another way of saying that what we wish education to do, depends upon what we wish society to be. Hence all school procedure must be guided by social ideals. If this view is correct, and it can hardly be questioned, what are its chief applications to educational practice? One is that every subject must be taught for both its social content and its social applicability. Every subject has these two sides, and neither of them should be omitted in teaching. Take literature as an example. The content of literature hands down to us the ideas which are our social inheritance, and secures the continuity of

society. On the other hand, literature on its practical side as spoken or written language is a tool or instrument indispensable to society.

Several corollaries follow from the general principle just stated. One is that every subject should be taught so that the pupils can see its relation to real life; another, that a close connection should always be maintained between school work and communal activities which are matters of daily life.

Again, as the children will have to live and work with other people in society, they should be trained with this object always in mind. The strength of the social instincts in children points to the same conclusion. Hence group work and co-operative methods should play a much more prominent part than they do at present in the practice of the schools. Working together for a common end quickens the social sense, trains adaptability, and teaches the lesson of mutual dependence and the necessity of mutual aid.

Once more, practical methods and constructive arts should receive greater stress than they do at present in the work of the schools. Instruction should be less bookish and more concrete. The contents of books are generally fully known by the young only when they are interpreted by actual life and experience. Passive and receptive methods are contrary to child nature and cannot develop social efficiency.

Finally, school training should be based as far as possible on the principle of freedom and selfguidance. Children must be allowed to examine and experiment

for themselves. Only thus will they grow up to be active and selfreliant citizens. This will involve an important change in the rôle of the teacher. Instead of being the lawgiver he will become the helper. He will watch the children in order to study their capacities and needs. He will provide the educational material necessary for their individual development and let them exercise their powers upon it. The classrooms, too, will be changed. Instead of their monotonous arrangement of fixed desks, they will be equipped for doing and not solely for listening. The pupils, instead of sitting in parallel rows imbibing instruction from their teacher, will be able to arrange themselves in groups for tackling the concrete problem in hand.

So far as this country is concerned, these methods of socialising school work are better exemplified in nursery schools, kindergartens, and Montessori schools than in any other institutions. But perhaps the most complete and satisfactory application of the social or community idea to education is to be found in America in what is called the Gary school system. Gary is a small town of some forty thousand inhabitants in the state of Indiana. It has sprung up in comparatively recent times, and most of the inhabitants are employed in the works of a great steel corporation. Almost from the beginning its educational system has been organised and superintended by Mr. William A. Wirt, a man of ideas and administrative ability. The problem he set himself from the outset was not merely to turn out good workers for the local industries, but to use the money

available for educational purposes to the best possible advantage for training the children to become good citizens and happy and prosperous human beings. He believed that it was a waste of public money to have expensive school buildings with their equipment and playgrounds in use for only a few hours a day for some two hundred days in the year. Consequently he arranged that the schools in Gary should be used during the whole year from morning till night for six days a week for all kinds of educational work, and on Sundays for some work of a more general and social nature.

The school day in Gary is longer—seven or eight hours—than in this country, and each school building is used concurrently by two schools. Moreover, only half of the rooms are furnished as regular classrooms, the other half being used for different purposes, as indicated below. The courses of study and the time tables of the two schools occupying each school building are so arranged that the classrooms and other rooms are used alternately by the pupils of each school. By the money saved in this way—using the same building for two schools, and furnishing classrooms sufficient for only half the number of pupils in either of them—it is possible to provide particularly complete equipment of other kinds—workshops, laboratories, library, gymnasium, swimming pond (in each of the newer schools two gymnasias and two swimming ponds), kitchens, dining rooms, recreation rooms, lecture rooms, an auditorium large enough to hold the whole school, conservatory, school garden, and plenty of open space for play and



games. The playground of the first school built was two acres, of the second four acres, of the third eleven acres, and of the fourth nearly twenty acres. Each class spends two hours—one in the morning and the other in the afternoon—in play or in play application of a regular classroom lesson. The playgrounds are open every day and evening from Monday to Saturday, and on Sunday afternoons and evenings. They are also open during vacations, with physical instructors in attendance, so that there is always a place where the children can go to amuse themselves free from the dangers to health and morals incidental to play on crowded streets.

None but specialist teachers are employed in the Gary schools, and each teacher gives instruction in one subject or, it may be, two allied subjects to pupils at all stages right through the school. Yet notwithstanding all this incessant use of schools expensively equipped, and the provision of departmentalised teaching, the cost of the education of each pupil in the Gary schools is stated to be only forty dollars per annum as against forty-three dollars in Chicago.

The courses of study in the Gary schools have many instructive and original features, but the biggest idea of all, the one behind all the organisation and work, and the one that justifies their description here, is the social and community idea. Mr. Wirt believes that if the social end of education is properly emphasised, the pedagogical will, to a large extent, take care of itself. Hence he makes his schools miniature communities in which the pupils run a post office, a printing press, a general office (in

charge of a paid bookkeeper), and a grocery store in which mimic business transactions are carried out. The schools, moreover, use the agencies of the neighbourhood as contributors to their educational facilities. These agencies include industrial establishments, public library, various forms of voluntary activity, such as Y.M.C.A. and boy scout work, and the like. The pupils spend an hour each day in the auditorium for various forms of collective exercises, and during this time public and business men, social, religious, and scientific workers, in fact all who have anything interesting or useful to tell the pupils, are invited to come and do so. In this way the school acts as a social clearing house for the community.

The health instruction in the schools is closely connected with the public health department of Gary, and the doctor tells the pupils how the school may improve the health of the town. The principal teacher of chemistry in the schools is also analyst to the municipality, and the pupils assist in testing the purity of the water of the town, the milk supply, and other food products. Pupils learn their civics not from the general statements of textbooks, but as is pointed out in the fuller account of the Gary system by Professor John Dewey, in *Schools of To-morrow*, by making and enforcing the rules for their own conduct in the school and in the playground, by attending lectures in the public library and listening there to what Gary is doing as told by the people who are doing it, by holding political elections with booths and ballot, by electing their pupils' council with the same legal formality, by co-operating

with the public health and social agencies in the town, and by attending the auditorium lectures above referred to, for the purpose of learning more about their town. All these teach civic lessons that make their own appeal; the children see civic life with their own eyes, they learn citizenship by being themselves good citizens. Is there any reason why similar methods should not be attempted in England or Scotland, perhaps with modifications demanded by the different character and social environment of our pupils?

#### SCHOOL STUDIES

But to return to the schools of our own country, how may the curriculum and the general work of the school contribute more largely towards the realisation of the ideals and requirements of social life? Every study and exercise of the school may be utilised for the purpose, provided the teacher is himself imbued with social ideals. He will then make the social efficiency of his pupils, and all that this implies, the chief aim and purpose of all he does. The social aim involves the moral aim of education, for there can be little morality apart from social ends. It involves the knowledge aim, for every item of knowledge is of potential value to social welfare, and the greater the knowledge an individual possesses the higher in general is his social efficiency. It involves the vocational aim, for no person is socially efficient who is unable to earn a livelihood. The final and comprehensive test, then, for the inclusion or exclusion of a subject in the school curriculum is not so

much the pleasure or advantage it brings to the individual, or the extent to which it conduces to the harmonious development of his powers, as the degree in which it increases his whole efficiency so that society may in his after life derive most benefit.

At the present time the school curriculum is being examined in the light of this doctrine, and important modifications are being made in it involving the exclusion of some subjects, the addition of others, and important changes in the treatment of all. It is recognised that if the curriculum as a whole is to be an instrument for social efficiency, its subject matter must fulfil certain conditions. The first that may be mentioned is social usefulness. Studies should not only enrich and cultivate the mind and ennoble life, they should also tend to elevate vocation and improve the social conditions which lead to human happiness. In the second place, the school studies should be related, as far as possible, to the present life of the pupils, including life outside the school. This will keep school work always abreast of the needs of present day society. It will prevent studies being pursued, as has so commonly been done in the past, from an entirely artificial point of view. It will enrich the contents of the curriculum, will invest it with a living interest, and will give the pupils a more adequate preparation for the opportunities and responsibilities of modern life. • In the third place, the curriculum should give continuous opportunity for the close union of theory with practice, and of the culture factor with the practical or social factor in education. Group and team work should be encouraged as a means of

inculcating the lesson of mutual dependence, and the necessity of co-operation, and mutual aid. At every stage more emphasis should be placed than is done at present, upon practical work, and continual reference should be made to the bearing of all studies upon active employments in art and industry. The practical studies should provide some degree of familiarity with the typical processes by which society is maintained and perpetuated. As Professor Dewey, in a suggestive passage in *School and Society* (p. 29), says: "We must conceive of work in wood and metal, of weaving, sewing, and cooking, as methods of life, not as distinct studies. We must conceive of them in their social significance, as types of the processes by which society keeps itself going, as agencies for bringing home to the child some of the principal necessities of community life, and as ways in which these needs have been met by the growing insight and ingenuity of man; in short, as instrumentalities through which the school itself shall be made a genuine form of active community life, instead of a place set apart in which to learn lessons."

The outcome of such an education as has been outlined should be to socialise the young, that is, to prepare them in every sense—intellectually, morally, physically, vocationally—to take their place in society as good and efficient citizens. It should give them a knowledge of their complex social environment, and enable them to adjust themselves to it. It should give them an insight into human institutions, and should arouse their interest in institutional life.

It should give them a sense of their obligations to the community, and imbue them with the spirit of social service. Society can exist and advance only by the continual interchange of services among its members. As Mr. Kenneth Richmond says in a recent volume on *Education for Liberty*: "In a sense, the story of the rise and fall of civilisation in its different phases is nothing but the story of success and failure in effective mutual service." As the individual owes everything to his membership of human society, he should find his truest happiness and highest selfdevelopment in its service. According to the social teaching of our Lord, man lives only as he serves, and finds his life only as he loses it in the service of others.

Ability to use leisure wisely should be by no means the least important outcome of social education. A man's worth as a citizen depends in no small degree upon the way in which he employs his free hours. Hours of ease, which should promote enlightenment, culture, and love of the beautiful and the good in art, literature, and music, often promote instead degeneracy, depravity, and spiritual decay. It is unfortunately but too true that great masses of people in all ranks of society employ their spare time in the pursuit of only coarse and degrading pleasures. It has been said that hours of leisure produce more criminals and loafers than ever did hours of labour. Does the remedy lie in the diminution of leisure and of opportunities of mis-spending it? Does it not rather consist in increasing leisure for individual pursuits and hobbies, so that a man may work out his higher life

in all the freedom of selfdetermination? It was Aristotle who first pointed out the value of leisure. Undue labour, he said, precludes participation in the higher things of life, and there should be freedom from the continual necessity of attending to the satisfaction of the lower needs and wants. Excessive attention to bread-and-butter pursuits tends to make a man's vocation the prison of his soul. Macaulay in a passage hardly less applicable to our time than to his own says: "Rely on it, that intense labour, beginning too early in life, continued too long every day, stunting the growth of the mind, leaving no time for healthful exercise, no time for intellectual culture, must impair all those high qualities which have made our country great. . . . Never will I believe that what makes a population stronger and healthier and wiser and better can ultimately make it poorer."

Science and scientific methods should do much more still to economise the time of all sections of the community, and machinery and steam and electricity should make it possible in the coming years to reduce the amount of human toil and increase the leisure of the people. But to shorten the hours of labour without at the same time enriching the mind and widening the outlook of the worker by education, would simply be to give him more hours in which to waste his mental and moral powers. The old narrow and unsatisfying education, leaving half the powers of the individual undeveloped, and his interests largely untouched, has failed to exert much influence on the occupations of leisure. It must be replaced by wider education such as we have suggested, utilising to a greater

extent the active and social instincts of the pupils, and giving a training that has a closer bearing both on social life and the use of leisure. It must include the provision of free time pursuits,<sup>1</sup> and the encouragement of useful hobbies whether literary, scientific, or practical. A hobby on which a boy spends his free time has in many cases a greater social, ethical, and intellectual value than has much of the school work done in class. Moreover, it reveals talents that might otherwise remain undiscovered, it gives useful guidance in the choice of lifework, and it imparts an interest that remains through life. It may well be that the education of the future will place more importance on the encouragement of spontaneous activities even at the expense, if necessary, of some of the formal studies at present considered indispensable.

But in order to realise the social aims of education certain conditions must be fulfilled. In the first place, there must be smaller schools, especially in our cities. There can be no really efficient corporate life in the barrack schools, so common in populous centres at the present time. In the second place, there must be smaller classes, especially in our elementary schools. The large classes of sixty or upwards in many of these schools may be amenable to instruction, but not to education in the broad and social sense. Mass methods and mechanical discipline can never produce the social individuality of which we have been speak-

<sup>1</sup> In addition to games and sports, there are plenty of such pursuits to choose from—gardening, scouting, drilling, natural history rambles, visits to places of historical or a chaological interest, sketching, photographing, school magazine, various school societies—literary, debating, musical, etc.



ing in the preceding pages. Scope for selfexpression and individual spontaneity is a sheer impossibility in the large classes prevalent at the present day. When the nation perceives the immense social and educational waste produced by the system, financial arguments will no longer be allowed to block the way of the necessary reform. In the third place, there must be more of the principle of freedom in our system of education. A child's development from a helpless human being into a happy, moral, selfdirecting member of society is retarded unless he is allowed the liberty necessary for his growth. Swaddling clothes do not promote growth at any stage. Besides, as we have seen, the modern conception is that every school should be a little social community, and as such should be regulated as far as possible by the selfdiscipline of its members. In the world of adult society the individual is not consciously governed by restrictions on every hand. There are, no doubt, laws and regulations which society has set up, but as he goes about his ordinary activities and daily avocations, he is not made constantly to feel the limitations imposed upon him. In school society it is not so. The members are hedged in by rules imposed from above, by regulations which, at the stage of development of the children, appear more or less arbitrary and conventional. School is, even yet, too commonly a place where children are required to sit still at desks and listen to the teacher, to perform tasks according to direction, and to speak only when spoken to. Doubtless such restrictions are imposed in the interests of the children, many of them, it is to

be feared, only in accordance with our adult notions. But they are after all lingering relics of the old doctrine that the doing of distasteful and uninteresting tasks is essential for both moral and mental salvation.

The modern idea is that goodness is genuine only if it is free, and that by attempting to compel the good we may miss the better. We now understand more about the dangers of repression, and about the necessity of freedom for individual effort and initiative. The investigations of modern psychology have led to a fuller knowledge of child nature, to a preference of internal to external discipline, and to emphasis on the controlling power of interest, selfactivity, and community spirit, as opposed to the discipline of compulsion. Free discipline—the opportunity and encouragement to govern oneself—does not mean liberty for the individual child to follow his own desires regardless of those of others. In the school, as in the world at large, there are always checks on individual freedom imposed by nature and by man. Where freedom in the school should end and restriction begin, is simply education's share of the age-long philosophic problem regarding the relative spheres of authority and free will.

If the Great War has taught us anything, it is that only through individual freedom can we rear the higher types of civilisation. So far as the education of the young is concerned, the movement toward greater freedom and greater scope for activities initiated by the individual, either alone or in co-operation with his fellows, is gathering an over-

whelming weight of evidence in support of it. It has the support, as we have said, of modern psychology and of the most recent educational experiments. We have it at present in operation in every nursery school and in every good infant school. Activity founded on liberty is the fundamental principle of Madame Montessori's reforms. The various new social experiments for dealing with youthful delinquents—Mr. W. R. George's Junior Republic in America, Mr. Homer Lane's Little Commonwealth, and the reformed children's courts in this country—are all proving, even in the case of criminal children, the superiority of the methods of freedom to those of compulsion. The institutions mentioned have gone even further, and have introduced with excellent results the principle of selfmanagement or selfgovernment. The young people co-operate in framing the laws of the institutions and in seeing that they are observed, and only in cases of refusal to obey the laws so framed and administered have the officials to interfere and support the committee appointed by the pupils. At the other end of the educational scale a similar method has been tried and has succeeded. The feature that more than anything else has made the great public schools of this country famous all over the world as character forming institutions was due to the wisdom of Dr. Arnold, greatest of headmasters, in taking his senior boys into his confidence and sharing with them the government of the school. The system has been extended in a rather timorous way in the prefect system now adopted by practically all the secondary schools of the country.

It has been introduced into some primary schools, and the next step will probably be the introduction of a certain measure of selfgovernment into all schools.

• A fourth condition for the realisation of the social ideals of education lies in the teachers. They are the most numerous and the most influential body of social servants—a reason, by the way, why the utmost care should be taken in the selection of entrants to the profession. The whole life of the community flows through the schools, and the teachers there are not only trainers of children but veritable makers of society. Their success is measured not merely by the number of pupils who satisfy the ordinary educational tests, but by the number who go forth from the schools prepared and keen to play their part as loyal and efficient citizens. Hence, as Mr. Fisher, Minister of Education, well said in January 1918: “Every teacher is the better for considering how he stands in the general scheme of conscious benevolence, and to what extent he really contributes to raise the level of intelligent civic spirit and action in the community.” It ought to be an essential part of the preparation of the teacher for his professional work to make a definite study of social theory, and to combine this with a certain amount of social practice, so that he may acquire a deeper, more sympathetic, and more practical insight into social conditions and social factors. The modern development of sociology, social psychology, and social ethics has furnished a broader basis for the science of education. Educational theory now concerns

itself not only with the processes and methods of mental, moral, and physical development as revealed by psychology, ethics, and biology, but also with the processes involved in the preparation of citizens for intelligent participation in the varied activities of community life. Hence it is necessary; as we have said, for every teacher nowadays to be a student of the social aspects and relationships of education, to be something of a sociological as well as of a psychological expert.

During the last two decades there has arisen a demand in this country, and even more markedly in America, for the wider use of school buildings outside ordinary school hours as social centres for the benefit of the entire community. There is a feeling that the expensive school plant is not giving the community all the service it should by simply educating a number of children during the day, and that it should be used in every way possible at other times for the social, recreational, and educational purposes of present or prospective citizens. The school has ready at hand all the material equipment of meeting rooms, assembly hall, laboratories, workshops, museum, gymnasium, swimming ponds, etc., provided at public expense for public ends, and to utilise these for the purposes we have mentioned is in harmony with the larger social and educational conceptions of the present day. America has given a splendid lead in connection with this movement. The Gary schools, as we have seen, with their unusually complete indoor and outdoor equipment are in constant use as social centres

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They even conduct branch libraries and public restaurants for the benefit of the community. In New York, Boston, Chicago, and indeed nearly all the centres of population in the United States, the educational authorities provide in the schools public lectures, concerts, art exhibitions, cinema shows, libraries, and reading rooms, place the school buildings freely at the disposal of various societies and clubs, and provide facilities for dancing and all kinds of indoor and outdoor games. The view is that recreation is one of the most valuable, as it is probably the most neglected, of social forces, and that it should not be left to chance with all the dangers chance involves. In this country a good deal has already been done by way of making the school a social or community centre, but the extension of the movement is hampered by the present division of administrative authorities. The near future will undoubtedly see much greater developments in this direction, especially, we think, in rural districts when education is placed under the management of the local authorities in charge of the other forms of community activity.

But social education is not the task solely of the school or schoolmaster. If it were, the burden would be too great. It is shared by social, educational, and religious agencies outside the ordinary educational system of the country—the universities, especially those that give systematic courses of social study and training for preparing voluntary and official social workers, the Workers' Educational Association, Student Christian Movement, social settlements, the boy scout, boys' brigade, girl guide, and cadet move-

ments, and many others less known. These are doing in their various ways an indispensable work for social education. Then, too, the school has invaluable co-workers in the other great social institutions—the home, the Church, the State, the vocation—which give forms of social training that the school itself could never give.

But it must be remembered that the efficiency of these other institutions depends largely upon education. It is hardly possible to exaggerate the importance of the schools of the country. There is no ideal which a people can set before itself which it cannot attain in a few decades through the transmission of it into the national life by means of the educational system. In this way, Japan transformed herself in a couple of generations, and placed herself in the front rank of civilised powers. By the same means, in half a century Germany made herself, materially at least, one of the most powerful and most prosperous of nations. It was in the nature of her ideals she went astray. In the days when Germany was reshaping herself, William II. and the ruling caste deliberately used the entire educational machinery to saturate the nation with the ideals of domination and militarism, and the result was the extraordinary display of unscrupulous force and military strength she gave during the War. Had the leaders devoted the same amount of effort and organising skill to the inculcation of really worthy social ideals, there is no position among civilised nations to which their country might not have aspired and attained. Once an ideal is successfully imposed on the mind of the

young through the educational system, it becomes the expression of the collective soul of the people and nothing can stay its power.

The title of a recent book is *Civilisation at the Cross Roads*. The course civilisation takes and the goal it reaches will depend not solely on the terms of the treaty of peace or the formation of a league of nations, but rather on the nature of the social and spiritual ideals civilisation henceforth sets before itself and transmits to successive generations through education.



## VII

### THE CLASSICS IN SCHOOL AND UNIVERSITY

I PROPOSE to approach the question of the Classics from the end rather than from the beginning. It is one of the chief lessons of Greek philosophy that growth of any kind can be understood only from the point of view of the fullgrown individual, and if we forget this, our theorising is apt to be in the air. We are too prone to start with "the child" or "the adolescent," though these are only abstractions if we leave out the chief fact about them, which is just that they are destined to grow up. A distinguished German teacher has recently declared that, in his own country, there are more educators than educated people;<sup>1</sup> and we must beware of falling into the same plight. In any case, it can do no harm to look through the right end of the telescope for once and

<sup>1</sup> O. Immisch, *Munera Martis* (Neue Jahrbücher für Pädagogik, xxxvi. (1915), pp. 159 ff.). It is interesting to observe that the chief lesson Immisch draws from the War is that the Germans have been wrong in treating the young men in the upper divisions of their higher schools as boys. That is the criticism I made on the system in *Higher Education and the War*, though Immisch's article was not accessible to me when I wrote it. It is also instructive to note that, though he sees the defect clearly, he is afraid of what seems to be the only effective remedy, the revival of the Arts Faculty in the German universities.

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see how things appear to us then. I shall begin, therefore, with the highest forms of classical study and work downwards from these.

### I

Now the first thing we have to realise is that we are witnessing the dawn of a renaissance of humanism in Europe comparable only to that of the fifteenth century or to the magnificent expansion of natural science in the nineteenth. In both these cases the impulse was given by a series of great and unexpected discoveries, and so it has been here. A classical scholar turned fifty can barely recognise the studies of his youth, and finds it harder every day to keep up with the advance of knowledge in his department. Excavation, especially in Crete, and the recovery of *papyri* from the sands of Egypt have not only transformed our outlook upon the Mediterranean civilisation, of which our own is the lineal descendant, but have given us the inspiring feeling that some new truth of first-rate importance may come to light any day. These discoveries are chiefly due to scholars of our own country and of the nations now allied with us, and it is certain that they will be enormously multiplied and accelerated after the War, when Asia Minor, Syria, Palestine, and Mesopotamia become more freely open to research. Again, there is a new spirit stirring in the study of Greek thought, science, and religion. In France, in Italy, and in Belgium, for instance, men whose primary interest is in science have been more and more feeling the need of going back to its source in order to get a clearer view of its

purpose and meaning.<sup>1</sup> It is becoming plain that what we call science may be best described as *thinking about the world in the Greek way*. That is why Newton's *Principia* and Darwin's *Origin of Species* could be quite easily translated into language which would have been intelligible at once to a member of the Platonic Academy in the fourth century B.C., while the "principle of relativity" could be explained in Greek without the use of a single word or phrase unfamiliar to Zeno of Elea in the age of Pericles. Then there is the vast and still only partially explored field of Hellenistic civilisation, which is fundamental for a right understanding, not only of the Christian religion, but of modern philosophy. In fact, we see new paths opening before us in every direction.

But there is another, and perhaps a deeper, reason for believing that a humanist renaissance is at hand. The War has brought many grievous and irreparable losses, and it has placed western European civilisation in jeopardy. That civilisation is the direct heir of Hellas and Rome, and can be restored only by fresh contact with its origins. The first need of distracted humanity in the near future will undoubtedly be a renewal of interest in the things of the spirit, and that can be brought about in many ways, of which scientific study is certainly one. I will not insult science by regarding it in the vulgar way as the minister of material comfort or even as the handmaid of national defence and industry. These things have their value,

<sup>1</sup> Abundant evidence of this will be found in any recent volume of *Scientia*, the international periodical published in Italy. One need only mention the names of the late Pierre Duhem, George Sarton of Ghent (lately a refugee), and Aldo Mieli (now serving in the Italian army).

but they are by-products. The deeper aspect of reality has never been hidden from the true leaders of science; for science too is spiritual, since it is just what the human mind has elaborated in its effort to give an account of the world which shall be satisfying to human reason. Nevertheless, for most men the approach to spiritual things will always be easier and more direct through letters and art, and for this reason I believe that, in the hard times ahead of us, the greater number will turn rather to the poets, historians, and philosophers for solace and edification than to the austere discipline of the exact sciences. That is for the few; the mass of men can hardly penetrate beyond its outer courts.

Now, if these things are so, it is plain that the young scholar of to-day has opportunities such as his immediate predecessors never knew, if only he is prepared to face the *labor improbus* of his task. He must not only know Greek and Latin thoroughly, but he must be able at least to read French, Italian, and German. If he knows nothing of science, he will be blind to one of the chief activities of Greek antiquity. The study of the classics makes great demands, but no young scholar should aim lower than the highest. He will fail to attain it, no doubt, but some failures are better than some successes. Of course, those who can make any personal contribution of value will be few in number, but those few will be of inestimable value to the nation. A people that can contribute nothing to the spiritual movement of the time is doomed to mediocrity, and such a prospect should be intolerable to any patriot. The first test

therefore, which I should apply to any system of education professing to be national is how far it helps or hinders the progress of those who are capable of taking a leading part in the restoration of humanism.

But, besides these few, there are many others who may not be able to take a personal share in the work, but for whom a good classical training is essential. The serious student of English or French or Italian must have a competent knowledge of Greek and Latin literature, and it is clear that, under a proper system of training, no one would be permitted to teach these subjects who could not produce satisfactory evidence of classical studies. You may have a very good command of all the English that matters without knowing a word of Anglo-Saxon, but it is impossible to have a secure understanding of our literature, "watered as it has ever been and renewed from Mediterranean springs" (Sir A. Quiller-Couch, *Edinburgh Review*, April 1917, p. 262), without a very considerable acquaintance with the Greek and Latin classics. It is literature, not language, that really counts, and our literature is not Germanic but Latin. If the classical tradition were to be lost among us, the works of nearly all our great writers would become a dead letter. Again, it is plain that the student of history must have a classical training if he is to draw his knowledge from the sources. I do not refer merely to the Latin of charters and chronicles. The historian must be at home in the best thought of the period with which he deals, and that will take him beyond Latin; for the ideas of the Middle Ages and the Renaissance can be understood only when

viewed as a link between Hellenistic and modern thought. Moreover, one result of the War will certainly be that we shall no longer be able to treat the history of the West in isolation. We shall have to revert to the wider outlook of Gibbon, and this means that we shall have to pay more attention to Byzantine studies than we have hitherto done.

As for students of divinity and candidates for the ministry, it ought not to be necessary to say anything. If we believed that salvation depended on physics and chemistry, we should not tolerate the ministrations of any one who had never seen the inside of a laboratory, and yet we allow men to expound the New Testament to us who can read it, if at all, only in the light of their acquaintance with a translation made some centuries ago. The meagre requirements of the churches in this respect are a scandal, which is all the more surprising as we still have a large number of scholarly divines among our theological teachers.

The possibilities of this line of argument have by no means been exhausted, but enough has been said to show that the country requires a very considerable number of young men with a sound classical training for the purposes of its national life. That requirement is rooted in history and in the nature of things, and, whether we like it or not, it cannot be altered. In Scotland at least, as a glance at the lists of honours graduates in the university calendars will show, we are not producing anything like the number we need, especially if we take into account the fact that a fair number of the classical scholars we do produce are

absorbed by the English universities and the Indian Civil Service.

## II

That brings us face to face with the greatest weakness of the Scottish system, which is that, in matters of high scholarship, Scotland is and always has been parasitic. Ever since there was any demand for scholarship at all, our young men have gone to France, Holland, Germany, or England to acquire it. Let me say at once that, from the point of view of the young men themselves, this was by no means a disadvantage. It is a good thing in itself to carry on one's studies among new surroundings and in a fresh atmosphere. The question is whether a small country can afford the loss this system involves. Apart from university professorships, of which the number is very limited, there is little to induce a young scholar who has completed his training "furth of the Kingdom" to return. The English universities open their doors to him in the most generous manner, and he can usually find more congenial work there than at home. In this way Scotland has lost many of the best of her scholars, and so the deficiency of the output becomes more glaring still. Moreover, the poor man's son, who is just as likely as any one else to be a good scholar, cannot go to Oxford or Cambridge unless he gets a scholarship there and also one from Scotland, and it is largely a matter of luck whether these come his way or not. The thing has become still harder since the age of leaving school in Scotland has risen to about eighteen. There is

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an age limit for all the best scholarships at Oxford, and it is now a matter of very great difficulty to add a full course at Oxford to a course in a Scottish university, as we used to do a generation ago. Since the beginning of the present century, hardly a single student from a Scottish university has been elected to a scholarship at Balliol. It can no longer be said with truth that the possibility of an Oxford training compensates adequately for the insufficiency of our own arrangements, and it has tended to make us acquiesce in a very unnatural state of things. We have got into the way of thinking that we can always send our best men somewhere else for high scholarship, and that we need not trouble further about it. For the reason I have given, this way of escape is no longer so open to us as it was.

About thirty years ago some of us who had ourselves received the best part of our training in England began to feel that the position of our national universities was rather a humiliating one, and a movement was set on foot to raise the standard of classical teaching in the country. In 1892 I took this as the subject of my inaugural address at St. Andrews, and what I said was well received. It was all quite true, but unhappily we failed to take a wide enough view of the question, and the measures then adopted only made things worse than they were before. In those days the institution of an entrance examination was regarded as a panacea, and we imagined that, if we could prevent unqualified students from attending the Latin and Greek classes, the schools could easily adapt themselves to the new conditions, and we



should be able to do real university work at last. We did not take into account sufficiently what it was possible for the schools to attain under the conditions in which they had to work, and we certainly did not foresee that these conditions would become even more unfavourable as time went on. The examination was a failure from the first. The papers set in Latin and Greek both in the preliminary and the leaving certificate examinations were really impossible except for the best pupils of the best schools, and most of the candidates who passed owed it to the excessive leniency of the examiners. No one would venture to set such papers now. We have more or less arrived at a compromise between what is desirable and what is attainable, but the standard of university work in classics has not really been raised, though the age of the students has. We know now that we began at the wrong end. The standard of work possible in the universities is absolutely determined by that which can be reached in the schools, and even the best of the state-aided secondary schools in Scotland are not in a position to produce the same results in classics as are produced in other countries. That is not the fault of the schools, but is inevitable in the circumstances, as I shall try to show.

It must never be forgotten, for instance, that three-fourths of the students who enter the German universities have had nine years of compulsory Latin and six of compulsory Greek before they are allowed to matriculate, and that, whether they intend to study classical philology at the university or not.

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The remaining fourth have had equivalent periods of Latin and French, or French and English, and nearly all have also studied a third language for seven years. Many take a fourth language, though that is optional. In England the average length of the school course is doubtless lower, but that is because the better boys are promoted rapidly, a thing which is not permitted in Germany. The result is even further beyond anything that can be attained in the state-aided secondary schools of Scotland. We in the universities have to be content if our classical students have had five years of Latin and two of Greek before they come to us, and we have therefore to overtake at college the work which is done in the upper division of the school in England and in Germany. That is inevitable, and no entrance examination can make the slightest difference to it. Nor does there appear to be any prospect of these schools becoming able to do more than they do. In the first place they have not the staff, and they are finding it more and more difficult to replace the wastage in the staff they have. And in the second place we are bound by all our best traditions to keep the door wide open as long as possible in order that a higher education may be within the reach of every class in the community, and cannot therefore begin the serious study of languages before the age at which the best pupils can be transferred from the primary to the secondary school. It is worth while to make great sacrifices for this end; but they are sacrifices, and nothing is to be gained by pretending they are not.

## III

If, however, we are to sacrifice the standard of our classical teaching for a public end, we are at least entitled to claim that no avoidable obstacles should be thrown in our way. It is a good deal to ask of a professor of Greek that he shall adjust his teaching to the capacities of students who have begun the subject only two or perhaps three years before they enter his class, but that is what we have to do, and we are willing to do it rather than allow the youth of our country to be cut off from studies which so many of them are eager to pursue. We only ask that things should not be made harder for us than they need be, and that those who wish to study classics should not be discouraged. That is far from being the case at present. We have no "compulsory Greek" in Scotland, and I agree that, on the whole, we are better without it. What does call for protest is that we have so much compulsory greeklessness. Some of my best and keenest students have had no chance of learning Greek before they came to college, and have had to spend valuable time there in mastering the rudiments of the language, and some have discovered only in their second or third year that Greek was indispensable to them. Having been faced so often by problems of this kind, I have naturally done what I could to ascertain the cause of this growing evil, and I have always been brought back by one way or another to the intermediate examination in the secondary schools. I say this with great reluctance, for at first sight it seemed to be a good

thing that the courses of the intermediate school and the first three years of the course of the secondary school should be assimilated as far as possible in order to facilitate transference from the one to the other. The intermediate certificate examination may have done some good in this way, but I have come to the conclusion from my own experience of individual cases that any such advantage it may have is too dearly paid for, since it does not allow the secondary school to perform its most essential function adequately.

Till lately the prevalent view has been that the secondary school should be regarded as a self-sufficing unit, that it has only to consider the interests of secondary education, and not to regard itself as preparatory to anything beyond it. This view was due to a natural reaction. In the past it may be that the general interests of the schools were too much sacrificed to their preparatory task in the supposed interests of university entrants, though I think there has been a good deal of exaggeration about this, and of course, it is pointed out that the majority of their pupils are not going to a university at all, and that it is necessary to give them an education which shall be complete in itself. There is unquestionably a real difficulty here, but it is due to the fact that the state-aided secondary schools are at present in an ambiguous position and have to discharge two quite different functions, which in other countries are assigned to different types of school. These are apt to come into conflict. That is no reason, however, for neglecting one of them altogether, and that, I

venture to think, the more important. If higher education is not to disappear completely, it is absolutely necessary that there should be schools which make it their deliberate end to select and prepare those whose education is to be continued beyond the leaving certificate stage, whether at a university or some other institution of similar rank. It is simply not the case that a leaving certificate which may be a very good one for those who are going no further, is necessarily a sufficient qualification for entrance to a university, and it cannot possibly be made so, since the requirements of university study are determined by history and the nature of things, and can be modified only to a very slight extent indeed. Now it appears to me that the raising of the compulsory school age and the institution of compulsory continuation classes, if judiciously handled, may possibly relieve the secondary schools of a good deal of the burden they have at present to carry. The secondary school is not the place for pupils whose education is to end at the intermediate stage, and the great majority of pupils who reach the leaving certificate stage ought certainly to go further. If that is so, and surely it is so, the curriculum of the secondary school should be primarily adapted to those who are to complete the normal course of higher education, and the rest should be dealt with, as far as possible, by other agencies. It is the imposition of the intermediate examination on the secondary schools which prevents this being done. I shall discuss the question mainly from the classical point of view, but what I have to say has a wider applica-

tion, and I believe that other departments of higher study suffer from this cause as much as classics.

It may, I think, fairly be assumed nowadays that certificates and examinations are an evil in themselves, though perhaps a necessary one. At any rate, it will be generally agreed that there should be as few of them as possible. The intermediate certificate is, properly speaking, the leaving certificate of the intermediate school, and as such it has an important function to perform. When, however, it is introduced into the secondary school, its character is completely changed. It cuts the curriculum into two parts which have no necessary relation to one another, and it suggests that the later part of the curriculum is a sort of appendage, an idea which finds expression in the monstrous term "post-intermediate course." The effect of it on the earlier part of the course is even worse. The very existence of the certificate suggests to parents, teachers, and pupils alike that the attainment of the certificate is the end to keep in view, and it is certain that purely educational considerations will not be allowed to stand in the way of this, especially in the smaller schools. Human nature being what it is, this means that the subjects which are found in practice to be most difficult will more and more be squeezed out of the intermediate curriculum, and will be held over till the certificate has been gained. They will then have to be studied all the more intensively, as it is called, which generally means more hastily, and a real danger arises of undue specialisation at an age when anything of the kind should be wholly dis-

couraged. The five or six years a boy or girl spends in a secondary school is none too long a time to be treated as a unity, and anything which breaks it up is to be deprecated.

The intermediate curriculum itself is singularly inelastic. To qualify for the certificate, the pupil must take English, mathematics, one foreign language, science, and art. As to English and mathematics, little need be said. They are essential parts of any curriculum that could be devised, but the mathematical examination possibly requires some modification both in character and amount to suit the powers of different classes of pupils. It is also of the utmost importance that the pupil should acquire correct views of the physical universe at as early a stage as possible, though I venture to think that "Science" is rather a big word to use for anything that can be rightly taken at this stage, and I am far from sure that the kind of work actually done under this head is what is really wanted. In any case, it should certainly not be placed on a level with what must always be the fundamental studies. It seems to me that what would have most educational value would be a more or less recreative course, introducing the learner to the great facts of cosmology, and to the history of scientific discovery. These things can easily be made intelligible and interesting to the youthful mind, and would be a far better preparation for real scientific study later on, if the pupil felt drawn that way. I cannot find that the university teachers of science attach any great importance to the scientific work usually done in our schools. They

prefer, if anything, to start with a clean slate, and what they really require for their purposes is an intelligent interest in the more general problems of science and a competent knowledge of mathematics. These considerations apply still more strongly to drawing. It is a delight to many, but a vexation of spirit to some. Every one should have a chance of acquiring moderate skill in it, and that could be easily secured without the formidable apparatus of a certificate under government authority. Of course in an intermediate school, where the pupils are going on further, it is necessary to secure that these things should be taken at an early age or they will not be taken at all, but in the case of secondary pupils competency in drawing should be secured before the secondary school proper is reached; or failing that, the subject should be reserved for a later period, when it might be studied with more leisure and profit. In the last two years of my course on the classical side of the High School of Edinburgh we managed to get in English, Latin, Greek, French, German, and mathematics, we found some time for science, and some took drawing as well. I still feel grateful for the broad curriculum that existed in those days.

It must not be forgotten that science and languages stand in quite different positions. If a language is not begun early, it will never be mastered at all in the great majority of cases, whereas the study of science can quite easily be postponed provided that a good grounding in mathematics is secured. If we can count on only two or three years of a language at school, then we shall have to



spend our time in the universities on accident and syntax, which is not our proper business. The Professor of Humanity should be teaching humanity, that is to say the literature, institutions, and thought of antiquity, and not the use of the subjunctive mood in subordinate clauses. Somebody, however, must teach these things, and, if we cannot take them for granted in our students, we shall have to teach them ourselves, with the result that our proper work is not done at all. It should be added that these things are learnt easily enough at an early age, but are distasteful and irksome at a later. The university student feels rightly that he ought to be doing something else, and that is not a favourable condition of mind for study.

Now I have no desire to see two foreign languages made compulsory on every one. There are a certain number of pupils who have no gift for language at all, though I think, with proper methods, they will be found to be a minority. All I ask is that it should be made quite easy to begin two foreign languages at a reasonably early age, and that, without removing science and drawing from the curriculum. A pupil who takes two foreign languages should not be required to pass in science and drawing also, at any rate in the earlier part of his course. So long as the present system remains in force, it is made very difficult for a boy with a gift that way to begin his second language early enough, and the third language is more and more squeezed out, at least in the smaller schools. In these schools an unnatural competition is thus set up between Latin and French, which ought,

at this stage, to be complementary subjects. It is not the case, of course, that French is an easier language to learn than Latin. I have taught both myself, and I am prepared to admit that it is in some ways more difficult to acquire a real scholarly knowledge of French than of Latin. That, however, is beyond the range of the intermediate certificate altogether, and it is indisputable that it takes less trouble to make a barely passable appearance at this stage in French. The beginner's chief difficulty in any language is not so much the grammar as the vocabulary, and a very large part of the French vocabulary is familiar to him before he begins the language at all, seeing that it is common to French and English. No doubt the words do not always mean quite the same thing, though they may be spelt in the same way, but such fine shades of interpretation do not enter into the purview of the intermediate curriculum. On the other hand, this is just what makes it a comparatively easy matter to begin French soon after Latin, and it is surprising what an intelligent teacher can do to make the one throw light on the other. I still remember the day when I learnt that the French circumflex usually indicates the dropping of a Latin *s*, and it made both subjects more interesting at once. In the higher schools of Germany where Latin is taught, it may be begun at the age of nine, and French comes two years later at eleven. That is more than we can venture to hope for here, but it should at least be remembered when our universities are unfavourably contrasted with those of Germany. There is no reason whatever

why the study of classical and modern languages should be set in opposition to each other. It is bad for both, since they are all parts of the same historical development, and the pupil who takes classics is usually good at modern languages too, as every one knows who has had to teach French both on the classical and the modern side of a school. What I ask for, then, is some direct encouragement for the study of two languages during the intermediate course with the possibility of beginning a third. It would be best if the intermediate certificate were abolished altogether in the secondary schools; but if that is too much to expect, it should at least be made more capable of adaptation to the needs of those whose interests are chiefly in language and literature. Unless this is done, there is no hope for literary studies at the university.

The matter is a very serious one for the schools in another way. The great majority of educated people do not believe in a bisected curriculum, and they are becoming less and less inclined to send their sons and daughters to schools where such a bisection exists. Any one who will think over what he knows of his own acquaintance will at once be struck by the fact that a great and growing number of men who were themselves trained in the secondary schools of Scotland do not now send their sons to them if they can possibly afford to do otherwise. The fact is generally recognised, but the explanation usually given of it is superficial. It is commonly set down to "snobbishness," and no doubt that may account for the attitude of some of the *nouveaux riches*, but

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it will not explain that of the professional classes. Most of the latter can ill afford the pecuniary sacrifice of sending their sons to schools in England or to those schools in Scotland which, not being in receipt of state aid, are free to arrange their curriculum as they think best. The fact is that they can still less afford that their sons should be kept back till they are fourteen by the requirements of the intermediate curriculum, with the result that, when they are eighteen, they are at least two years behind the pupils of schools which are free from that institution. Even if they were wrong in their views of what constitutes a good education, it is happily impossible in this country to force them into any particular schools, and it is a grave social danger that this class should become entirely divorced from the national system of education. It would be interesting to know how many professors in the Scottish universities have sons or daughters at a state-aided secondary school. I do not know of one.

A further consequence of this is that, as the universities are practically bound to adapt themselves to the standard set by the state-aided schools, they lose the students who have been educated under another system, though they often number their fathers among their most distinguished graduates. The pupils of the schools which are free from state control are apt to go direct to Oxford or Cambridge, where they compete on equal terms with boys from the English public schools. It is obvious that this must have a very depressing effect on classical study in the Scottish universities; and if it were not for

the fortunate circumstance that ministers and schoolmasters are comparatively poor men, and cannot afford to send their sons elsewhere, we should be in a sorry plight indeed. It is, as I have already said, a great misfortune that so important a section of our youth should become estranged from the national universities. It is a new thing in Scotland, and it is producing a class distinction of a kind from which we used to be commendably free. In England a classical education is ceasing to be a mark of caste, and surely it is a pity that it should begin to be one here. In the main I have no doubt that the intermediate certificate is responsible for this, and that is one of my chief grounds of objection to it.

If only the intermediate certificate made it more possible for the poor man's son to acquire a classical training, much might be forgiven it, but I cannot see that it does anything for him whatever. The machinery for guiding talented lads into the right course is of the most primitive description, and it is mainly a matter of chance whether such a one gets his opportunity or not. I know a quite recent case of a boy who was a "half-timer" till he was fourteen and who then drifted into continuation classes, where he displayed an exceptional gift for languages, and learnt French and German in an exceedingly short time. Fortunately the attention of H.M. Inspector was drawn to him, and he was drafted into the "post-intermediate course" of a secondary school, where he learnt Latin and Greek and gained a leaving certificate, though he never had an intermediate. By this devious route he found his way at last to

the university—where he should have been at least two years earlier—with the advantage of a working knowledge of four languages other than English. Nature had meant him for a classical scholar, and she got her way at last; but how many boys are there in our elementary schools to whom such a chance never comes? It is impossible to say, but unless the Scottish people has suffered some radical change, there must be a goodly number, and the intermediate certificate does nothing whatever for them. The new Education Act will raise this problem in an acute form. If pupils are to be kept in the elementary school till they are fifteen and in continuation classes till they are eighteen, it will never do to cut them off from all prospect of a higher education because perhaps they have developed late and were not transferred in time to the intermediate course of a secondary school. Any one who knows the views of the Labour leaders on this point will see that they are making a claim which must prove irresistible because it is based on justice and on common sense. In the rural districts the problem will be still more acute. In the past it was quite common for a country lad to develop a gift for classical study when he was fifteen or sixteen years old, and a very considerable number of our best Scottish scholars have come from this class. What are we going to do about them? They cannot be reached at all by bursaries for secondary education, since they are too old for these, and they cannot get leaving certificates because they are too late for the intermediate. It is plain to me that there are only

two possible courses. Either we must allow the pupils of the elementary schools to enter for the intermediate certificate, which means that Latin must be taught there to such as are fit to learn it, or the intermediate certificate must cease to be a necessary passport to the leaving certificate. We simply cannot afford to overlook any possible source from which scholars may be drawn, and that will force us to put our higher education on a really democratic basis once more. We owe it, I think, to the new Education Act that this prospect has ceased to be a remote one. If the new education authorities rise to the height of their opportunities, it will not be impossible to frame a system that shall have all the advantages of that which used to prevail in Scotland without its many serious drawbacks, which I do not seek to minimise. Only we must remember that the thing is not to be done by external examinations and certificates. If we take that path we shall get nowhere at all. We are at the parting of the ways, and the future of scholarship in Scotland depends on the course we take in the next few years.

## VIII

### THE PLACE AND FUNCTION OF SCIENCE

#### § 1. *Britain's Heritage of Science*

SCIENCE is much more international than philosophy, literature, or art. This is partly because many different nationalities have made *essential* contributions to it, which cannot be ignored, which enter into it with the assurance of welcome guests. Moreover, it is distinctive of science that it is always open to verification by normally constituted minds. To say the same thing in a different way—although science is mainly indebted, like philosophy, literature, or art, to the work of great masters, it is a more impersonal development of the human spirit. Indeed it is not science if it is not impersonal. There is no Scottish school of science as there is of philosophy; there is no Glasgow school of science, as there is, to our admiration, of art. Science is every man's land, to the limit of his intellectual tether.

Nevertheless we belong, even as students of science, to Britain, not to Cathay, and it quickens our blood stream and our thought stream to remember the master discoverers who were of our race—men like Dalton, Davy, Darwin, Faraday, Galton, Gilbert, Graham, Harvey, Huxley, Jenner, Joule, Kelvin,



Lister, Clerk Maxwell, Newton, Ramsay, Stokes, and Watt. Hence the value of an historical introduction like *Britain's Heritage of Science* by Schuster and Shipley (London, 1917), for there is a thrill in the grandeur of the legacy that is ours. It does not take from our appreciation of the achievements of other nationalities to feel sure that Britain's share is second to none, and is perhaps finest of all. Every school should have its "calendar of great men," improving it may be on Comte's, and in that calendar the masters of British science should have their honoured place.

### § 2. *Neglect of Science*

But great as Britain's heritage of science undoubtedly is, it cannot be said that the British people has bestowed upon it adequate appreciation. We have indeed shared with other countries in the wealth that has accrued from applying science to the problems of exploitation, production, and transport; and we have, in medicine and hygiene, used science to master various microbic diseases and to remove or lessen some of the evil effects of scientifically transformed industrialism. Many of the applications of science, especially in the present day transition from the coal-and-steam age to the electrical age, have been revolutionary and transformative. But even here it is only with qualifications and reservations that we can lay claim to that real progress which the late Sir William Ramsay defined, at the level of physics and chemistry, as "learning how better to employ energy, how better to effect its transformation."

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The need of more knowledge, more accuracy, more scientific prevision may have been burnt into us by some of the costly mistakes of the War, while in other instances the value of knowledge, accuracy, and prevision has been triumphantly displayed. But welcome as is every fresh appeal now being made to science for guidance in intricate pathways, there is a danger-note in some of the cries we hear. There is a risk of forgetting that almost all the great practical advances due to science have depended fundamentally on purely theoretical, one might almost say cloistral, investigations. Men should seek after science primarily in the hope of clearer vision, not because of expected miracles of loaves and fishes. These will not be wanting, but, as Bacon said, the rewards of science that may be called "fructifera" rest on those which are "lucifera." The relief "of man's estate," as he phrased it, is the reward of the investigator's seeking after "the glory of the Creator."

It may seem a hard saying when people are literally perishing for lack of knowledge, but what is most needed is not any number of pieces of new knowledge, either about explosives or making two blades of grass grow where one grew before; what is most needed is a diffusion of the scientific mood. The search after science is independent of particular times and circumstances, of war or of peace. It is a deep organic need, like that for fresh air. It expresses an innate endeavour after clarity. It is a natural and necessary expression of the developing human spirit, this scientific activity, just like emotional or philosophical activities. We must have clear windows

on our environment; we must have an accurate understanding of the organic side of our being; we must have a rational mastery of what we are proposing to direct and control. It is sometimes said that our forefathers got on very well without science, but as a matter of fact, they got on very badly. Their control of life and things was limited in comparison with ours; they had to submit to many removable hindrances and remediable miseries which we can no longer tolerate. Moreover, as regards the *magnalia Naturae*, at any rate, our vision is clearer and larger than theirs.

### § 3. *What is Science?*

But before we go further we must make sure of our foundations. What do we mean by "Science"? We use the term in this connection to mean a system of knowledge reached by methods of observation, experiment, and reflection, and amenable to experimental verification. For typically scientific knowledge, as distinguished from opinion, hearsay, superstition, and claptrap, is of such a kind that it can be verified by competent and unprejudiced inquirers who repeat the observations and experiments, and make them the subject of independent reflection. Thus science is not only verifiable but communicable knowledge,—communicable to those who know the language (*e.g.* mathematical) of formulation, and can follow the argument.

Science is essentially descriptive formulation. Its aim is to describe uniformities of co-existence or

sequence in verifiable terms, as precisely and completely as possible, as simply as possible, as consistently as possible. The scientific note is struck when, as Aristotle said, "from a great number of experiences one general conception is formed which will embrace all similar cases." But its formulations have often an historical or genetic as well as an immediate reference. They deal with the course of events, and thus the more complete a science is, the more is it possible to read forward as well as backward, to deduce from the present the future as well as the past. A definition of science given by Dr. Trotter in his *Instincts of the Herd* (London, 1916, p. 11) seems to sum up the matter: "A body of knowledge derived from experience of its material and co-ordinated so that it shall be useful in forecasting, and, if possible, directing the future behaviour of that material." This quality of affording a basis of prediction, illustrated supremely well by astronomy, is characteristic, and enables the student to find a middle way between the exaggerated objectivism which spoke of the laws of nature governing the universe, and the exaggerated subjectivism which speaks of scientific laws as the creation of the human mind and not of outer nature. Man's formulations of the order of nature are often premature and inadequate, they are partial and asymptotic, but they are without doubt getting at certain aspects of reality with success, else we should not be able to predict the return of a comet, or the average stature of the sons of one thousand fathers. In the most diverse cases science can say: "If this, then that."

This brings us to recognise a cause of much misunderstanding, that the sciences are at various stages of development. In the domain of things, as treated by chemistry and physics, measurements can be made with extraordinary precision; analyses can be made with approximate completeness; formulations can be made with practical exhaustiveness, so that, given a knowledge of the conditions, predictions can be made with remarkable success. But it is different in the realm of organisms, still more different in the kingdom of man,—where measurements are so difficult, analyses so incomplete, formulations so tentative. We can predict when the comet will return, but we cannot say when or where the cat will jump. One science is like a solar system, another like a nebula, and yet the student of the latter may be as “scientific” as the student of the former. The investigator of dreams may be as scientific as the investigator of rocks, but he will admittedly find it more difficult. It is plain, therefore, why some sciences have a greater educational value than others. Thus for attaining to a habit of precision and for understanding how much precision means, chemistry and physics probably afford a surer discipline than biology or sociology. The view taken in this article is that science includes all knowledge, communicable and verifiable, which is reached by methodical observation and experiment, and admits of concise, consistent, and connected formulation. One of the results of careful scientific training is a discrimination of frontiers, *e.g.* where scientifically ascertained knowledge begins and where it ends, and likewise a cautiousness of statement in

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regard to the limits of the ascertainable. We should never be ashamed to say "ignoramus"; but "ignorabimus" is another matter. Only a few years ago one might have said; It is certain that no one will ever see through a closed box; yet now we detect the bullet buried in the bone and the pearl in the unopened oyster.

### § 4. *Educational Value of Scientific Studies*

(a) If the scientific studies in the school or college include, as they ought, discipline in observation, in precise registration, in drawing an inference that may be verified, and in carefully working towards a general conclusion, the result must be a specific intellectual training, the development of a scientific way of looking at things, a scientific habit of mind. It is not alleged that this result can be reached only by the pathway of studies in chemistry and physics, botany and zoology, geography and geology; it might be reached by the pathway of philology or phonetics, and so on. But experience has shown that scientific method is most readily illustrated in the physical and natural sciences, and that most young minds have a keen interest in the outer world.

(b) While science is essentially unemotional, and while its analytic, atomising, and anatomising methods are apt to be antithetic to artistic and poetical appreciation, it must also be remembered that science is a revelation of the wonder of the world. If Newton lessened the emotional value of the rainbow (though we never understood why Keats thought so) he gave

back tenfold. Mankind in the making was consciously and sub-consciously educated by the world powers, the immensities, the flux, the order; and the little men in the making of to-day should have their share in this culture, which nothing can replace. Modern science has added impressions of intricacy, inter-relatedness, evolution, and the like, ever widening and clarifying the emotional window. We would say that there are great vistas to which science alone can lead, and they make for elevation of mind, besides giving—no small gift—a quite inexhaustible interest to life. In this and in other ways science may be ranked as “one of the humanities.” (See Prof. J. B. Baillie, *Hibbert Journal*, xv., 1917, p. 353.) In short, the study of science makes for the culture of feeling, which may rise from sensory delight to “a love of nature,” and from “the first wonder” which is “the child of ignorance,” as Coleridge put it, to “the second wonder,” which is “the parent of adoration.”

(c) There is an ethical value in all careful work, but perhaps there is a specific ethical value in scientific training because consequences so inevitably and so quickly reveal themselves. The laboratory is a school of veracity by visible proof, where we see what carelessness may cost, where we get a wholesome respect for “fact.” The young worker may lay the foundations of impartiality and learn that in facing facts he must subordinate personal desire. “The longer I live,” Huxley said, “the more obvious it is to me that the most sacred act of a man’s life is to say and feel, ‘I believe such and such to be true.’ All the

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greatest rewards and all the heaviest penalties of existence cling about that act."

There is also an obvious ethical value when a scholar is gripped by the ever expanding interest and wonder of the world. In a fine essay, *Knowledge and Character* (Moral Education League, 1916), Mr. William Archer writes: "In many cases vice is a refuge from boredom, from that sense of emptiness and tedium that overtakes the idle brain, or the brain benumbed by soulless, uninteresting labour."

(d) Fourth, but only fourth, just as science has its practical value, so education in the ways of science, not only without mischief, but with great benefit, may have some orientation to the practical problems of life. A man is ill educated if he has no clear knowledge of the history of his country, and also if he is unaware of what the science of anthropology has to tell him of the history of his race. A man is ill educated who knows none of the masterpieces of literature, and also if he is utterly unable to find his intellectual way about among the birds and trees, among the seas and skies. It has been a onesided education that leaves a youth without intelligent interest in the march of the seasons or in the routine of everyday natural phenomena. It has been an inadequate education that leaves a man without a general understanding of the internal economy of his own body.

### § 5. *Reporting Progress*

Apart from mathematics the place of science in every man's education was but rarely recognised



before the time of Huxley and Spencer, to whose insight and enthusiasm we owe so much. It was to adults that opportunities were first given in "Science and Art" classes and the like, and in the welcome appearance of introductory books, some of which, like Huxley's *Elementary Lessons in Physiology*, were masterpieces. Shilling "primers" were prepared for schools, and to illustrate these the teacher could often buy a box of "objects." It was a day of small things, and nowadays we smile—a little too broadly perhaps—at the period of "object lessons." These, traceable in part to Pestalozzi, had obvious limitations, such as isolatedness, irrelevance, and stagnancy, but they were better than lessons without objects, and some teachers could use "a piece of chalk," "a piece of coal," "a piece of amber"—we have an affection for them still—as an 'open sesame' to treasure caves as interesting to us as Aladdin's. But Huxley struck a progressive note in his physiography, which was a geographical, geological, meteorological, physical, and chemical survey of the immediate environment, presented synoptically rather than analytically. It has grown into the physical side of modern "Nature Study," which is practically a twentieth century product, and into school "regional surveys." As some one has quaintly put it: "Useful knowledge begat object lessons, and object lessons begat nature study." Object lessons, simple physiography, and incipient nature study were for the junior classes; subsequently the senior classes in many schools got their laboratories, which in some cases were far ahead of the teaching equipment at the universities half-a-

century before. When we realise how young the inclusion of science in schools really is, for in 1859 Rugby was the only public school in England where science (apart from mathematics) was taught at all; when we recognise the importance of the steps—object lessons, physiography, nature study, and so on; when we inquire into geography rooms, school gardens, school museums, open air work, and so on, we see that we can report progress. And in spite of its searching criticisms and humiliating indictments, it is a note of progress that characterises the very valuable *Report of the Committee to inquire into the Position of Natural Science in the Educational System of Great Britain* (C'd. 9011).

#### § 6. *School Nature Study and Correlated Methods*

Experience and theory agree that, prior to the study of particular sciences, there should be a propaedeutic, namely nature study and correlated methods. The root idea is to inquire into the meaning of what the children experience in the outer world, especially into the meaning of the successive chapters in some one definite selected process, and to inquire not so much for the sake of information as for the sake of learning how to find out about things. Obviously, the most appropriate course of nature study, especially in the country, is to follow the march of the seasons, broadening and deepening the inquiry as year succeeds year. Some days it may be a question of the warmth of the sun, other days of the sprouting of seeds; one week the birds are coming back, and

again the elvers press up the river ; now it is with clouds and rain, and again with tides and the moon that the scholars are concerned ; to-day there is an exhibition of withered leaves, and to-morrow of all sorts of scattered seeds ; from the problem of the shower of gossamer we pass to that of the icicles on the eaves. There is nothing that does not mingle with something else ; there are no full stops, only commas. When the sentence, so to speak, cannot be finished, the wisest way out is not to consult an encyclopædia, but, as far as possible, to watch and see in the open air.

Certain educational principles are involved, but we need not expatiate on them, *e.g.*, that the mind may be educated through the senses ; that trying to find out, even if one fails to find out, is more educative than being told ; that science, like charity, begins at home, with the primrose rather than with the orchid, with the chaffinch rather than with the cockatoo ; and that psychological sequence for young people is often just the reverse of logical sequence. So many fine experiments in nature study have been made—many of the most successful in towns—and so many readily available essays have been written on nature study methods, that we need not do more here than claim recognition of the following conclusions :

(1) Nature study is a study, not of books, but of real things and occurrences, of real creatures and agencies. It has to do rather with an outdoor drama than with laboratory analysis. No finer instance could be given than the careful study of a cornfield from the sowing of the seed in the brown earth to the

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harvesting of the opulent wheat. A class study of an inch-thick cross section of a tree may be a very instructive object lesson, especially if each pupil has a section in his or her hand. But a new note is struck when the members of the class co-operate in studying an oak tree throughout the year, in studying it as a whole from the germination of the acorn to the intricate interrelations of the tree, the linkages, of which oak apples and mistletoe are familiar examples. No teacher of experience, face to face with the exigencies of orderly work and regular supply of material, is unaware of the danger of "lifeless" studies. How readily, with us all, biology sinks into necrology, which we often ingeniously vitalise. Hence the desirability of utilising, when we can, every vivid disclosure of livingness. To be definite, we do not know of anything that takes us farther "ben" into natural history than an observatory beehive. It beckons us farther than we can go.

(2) Nature study has little to do with verbal memorising or "getting up" a subject, but everything to do with observing, visualising, inquiring, registering, experimenting, describing, and inferring. Its method is Socratic rather than informative; it means learning rather than telling, though a hungry curiosity must not always be met with a stony "Find out for yourself." It is the first step toward discovery and research; it is the culture of the curious spirit in regard to the world without.

(3) Nature study should be predominantly regional and seasonal, *i.e.* related to immediate experiences. For the aim is that the scholar may come to have a

growing interest, at once intelligent and sympathetic, in the wonder of the changeful yet uniform, surging yet stable, *systema Naturae* of which he forms a part. Corresponding to the botanical and zoological side of nature study, there will be developed a non-analytical physiography, geological, meteorological, astronomical, and so on, though not one of these words need be used. It will be predominantly regional, but adjusted to the features of each place. Where the surface relief is not very interesting, more must be made of weather lore; a school on the coast will have a very different logbook from one on the uplands. Our capricious weather is perhaps some excuse for our neglect of open-air studies; but how much geometry can be most pleasantly learned out of doors! How much education can be got out of a stream or out of an echo! How profitable it is to get the school children to follow Sir Francis Darwin in a study of rustic sounds! And so on!

The educative value of school gardens, especially with many plots, is generally conceded. They lead to the study of *growth*, an indispensable counteractive of mechanical studies; they throw a new light on chemistry and surprise the pupil with the discovery that physical principles operate outside the laboratory; they offer individual responsibilities; they train in horticulture; they link together botany and bees and cookery; they afford refreshment as well as instruction. Surely, *il faut cultiver son jardin*.

The preparatory period of nature study and simple physiography should have a minimum of three-quarters of an hour on four days of the week,

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and should last till the pupils are about twelve years old. Throughout it all, there should be an experimental endeavour to try to secure three things.

- (a) The first thing to secure is a pleasant interest, which has been called the "growing point of learning." It is quite contrary to experience to assert that this interest is altogether born, and not in any degree made. It can be developed by devices, *e.g.* utilising the pupil's own data (what a step when he can say, "I also am an observer"!); linking a familiar experience, such as listening to the lark, with very great things in literature (Milton, Shelley, Wordsworth, Meredith); introducing the personal note by telling him a little about the great discoverers — heroes of science surely there are as well as the heroes of war — and so on. No one can ever go far, even in play, without strong endeavour, but there is something wrong—too big a class, too little time for preparation, too long a day— if an introduction to the study of the outer world is not interesting, if there is not the beginning of the formation of a settled habit of thoughtful inquisitiveness. There is truth in the maxim of Socrates that no instruction that grips can be given to learners "*παρὰ τοῦ μὴ ἀρέσκειντος*, by a teacher who does not give them pleasure." And the secret of giving pleasure is having pleasure, and the secret of that again is never ceasing to learn. A correlated maxim is to take advantage of natural occurrences that have in them a quality of surprise and thrill. How unforgettable the first sight of the moving stamens of the rockrose, the closing stigma of the musk, the sundew catching a fly, the young bird

coming out of the eggshell, not to speak of sunrises and northern lights and eclipses.

(b) The second thing to secure is a dawning realisation of the importance of accuracy, of seeing things clearly and not with the blurred vision which seems to be the most that moles can have ; of drawing things accurately so that they can be recognised with certainty ; of measuring, registering, weighing accurately when there is some good reason for doing so (and this requires practice, which on a wet day is not unenjoyable if not persisted in too long) ; and of describing things accurately, not in easygoing English, but in precise English, suited moreover in its form to its matter. This discipline in description, oral as well as written, should be helped by reading fine examples from the scientific masters. It should be part of the scientific discipline from beginning to end to learn to use English as an instrument of precision and clarity. In this appreciation of the mother tongue we see one of the meeting places of science and the humanities. --

(c) The third thing to secure is "the delicately suggested idea that this pleasant, half-recreative watching and testing, and this painstaking registering and describing, are alike worth while, as the beginning of an apprenticeship to that part of the business of life which consists in finding out precisely about things. We do not think that children or educational methods are so brittle that disruption will ensue if what is learned happens to be of use for after life ; but we are not at present suggesting a return to the "useful information" of the object lesson days.

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Our point is that the young mind should gradually come to realise that this nature study is not only a pleasant change from books, but is the beginning of learning how to face facts and deal with them without fumbling.

These three desirabilities, hinted at in the preparatory stage, should be more definitely sought after in the later stages when a beginning is made with the special sciences, and they should become still more deliberate aims in university courses. It is thus that organic continuity, in the spirit as well as in the letter, may be secured throughout. The inner side of this, so to speak, is the suggestion all through, which the teacher who is himself learning can best give, that there is no full stop, that one can always go further and deeper, that even the securely established facts are of most use as seeds which will develop. Who was it who called nature a serial story? He had the root of the matter in him, and we are sure that he never fancied he was coming near the last chapter.

### § 7. *The Æsthetic Approach*

If nature study is not to be shorn of half its virtue, if it is to be more than a little botany and zoology and so forth adapted to tender years, if it is to cultivate a love of the country and a nature interest, a delight in the open air and common things, then due use must be made of the æsthetic approach. The capacity for enjoying the beautiful in its varied aspects is part of man's normal hereditary endow-



ment, and it is a master key to many doors. The child is ready to enjoy pretty things before it is ready for much in the way of intellectual exercise or moral judgment. Let us enrich the developing child by moments of delight. They give it an immediate sense of spiritual wellbeing that becomes an index of the higher values. And they last ; for as a thoughtful educationist has said, "One hour of delight may be remembered for ever." It may be by some unusual thrilling stimulus, a beauty feast in the meadow or by the shore, in the museum or in the school "beauty cupboard" ; it may be by a patient habituation to the familiar beauty at our doors ; in some way or other the educator must help the child — as indirectly as possible and with art helping nature delicately—to an establishment of æsthetic values. For "only what you feel becomes your very own." Let children feel, then, that they are ever at the borders of something more wonderful than fairyland. Let them find, as Sir Thomas Browne said, "even earth itself a discovery." It need hardly be said that the born lover of nature, who can spread his enthusiasm as no mere teacher can, should be allowed a good deal of rein. Even if he sometimes run wild, he is priceless.

#### § 8. *In the Higher Classes*

Sooner or later, if there is to be thoroughness of discipline and systematisation of knowledge, the courses of scientific study must become more specialised and more analytic. The problem is to effect this in higher classes, from fifteen or sixteen onwards,

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without losing the everyday interest and the synoptic or allround outlook of the earlier nature study. Not only academic experts, but teachers who did not • acquire a knowledge of the subject in question, say physics, until they were university students, are apt to ignore or do violence to the psychology of the young mind, if this phrase be applicable in a realm where averages are apt to be fictitious because a recognition of individuality is essential. Sir Richard Glazebrook, the eminent physicist, had the candour to confess recently (*Times Educational Supplement*, May 2, 1918, p. 180) that he had been a party to the mistake of trying to transfer to schools the methods of the Cavendish Laboratory which were designed for the training of experts. Thus verifying Ohm's law and measuring the specific heat of copper may be thoroughly sound exercises for university students, but it does not follow that they are well adapted for school purposes. Indeed they are not, unless their relation to everyday life can be made clear. Repeatedly in the recent *Report on the Position of Natural Science* is the indictment pressed home, that there has been too much abstract experimenting, too little understanding of principles exemplified in familiar phenomena, and too little exciting of lively interest, not to speak of wonder.

A useful statement of ends is given on page 22 of the Report referred to. "A general course in Science should fulfil two functions: (a) It should train the mind of the student to reason about things which he has observed for himself and develop his powers of weighing and interpreting evidence; (b)

it should also make him acquainted with the broad outlines of great scientific principles, with the way in which these principles are exemplified in familiar phenomena and with their applications to the service of man."

The Scylla is that the work in the school laboratory becomes too much like uninteresting drill, that the principles are not grasped because they are not realised in everyday experience. There is little gain in acquiring dexterity in using an instrument that remains a box of mystery. There is great danger in over-elaborate school equipment. The Charybdis is that the school work remains "sloppy," that interest is gained at the expense of accuracy and thoroughness, that the scientific standard of workmanship is never discerned. But many a teacher steers his bark skilfully through the strait; our question is by what educational principles, intuitive or reflective, is he guided. What every one knows of congenital diversity of aptitude among pupils need not be dwelt on; what interests us is the fact that of many pupils many teachers make much.

We take it that the successful teacher recognises as desirable the following:

(1) It is desirable that the pupil should learn how to find out things for himself. At first he can take only a small step; he will have to be told how as a matter of fact this or that was discovered in the history of science. But that is better than getting every question answered or anticipated by bolts from the blue. By and by the pupil *will* find out something for himself. He will at any rate in his

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simple pendulum experiments get several decimal places nearer an accurate estimate of the force of gravity than his companions did.

• (2) It is desirable that laboratory results, *e.g.*, as regards the mechanical equivalent of heat, and principles made clear, *e.g.*, the conservation of energy, should be related at every turn to experiences in everyday life, and the homelier the better. This was part of the secret of that educational classic, Faraday's *Chemistry of a Candle*. There is a great deal of physics to be got out of a snowball, and what a stimulus in dissecting an old clock, or any other common mechanical device! There are extraordinarily fine educational opportunities in a science of everyday life; alike in town and country the world is full of interesting puzzles, a new Euclid. From a common object or occurrence one may unearth a principle, or one may use a familiar principle to interpret a common object or occurrence. It is surely good sense that boys especially should have an understanding of things like, telephones, electric bells, electric torches, field glasses, microscopes, periscopes, motors, incandescent lamps, arc lamps, fuses, dynamos, and even spectroscopes. We know of an admirable course of chemistry and physics, for girls more especially, which was worked out in relation to cooking and housewifery, and it did not lack thoroughness.

(3) It is desirable to utilise outstanding pegs of interest—but only when one can do so without being a bore; for nothing can be more calculated to cause the young mind to blaspheme than unseasonable

scholastic attempts at improving the occasion of a boy's thrilling experience in town or country. But given common sense—a time to be silent and a time to speak—how much can be made of aeroplane and tank, of showers of gossamer and rushes of salmon! The “pegs” for the country will, be obviously different from those for the town.

(4) As the mental grip strengthens, it becomes possible to illustrate the correlation of the different sciences, a vision of which has been a redletter day in many a development. There comes, we think, a conviction of the reality of science when it can be shown that different sciences—and actually different teachers!—work into each other's hands in the solution of a problem. Hence the educational opportunities of modern methods of geography. Hence the stimulus when the pupils are able to contribute to working out a regional survey, which is all the more educative because it is admittedly in the making.

(5) The ideal of seeking after understanding for its own sake must not be departed from, but the human mind is not such a tender plant that the teacher need refrain from illustrating from everyday life that science means foresight and foresight means power. Heaven forbid that we should in education fall victim to a squalid utilitarianism! but science is for life, not life for science. It can do nothing but good in the biological course to show how this or that fact bears on good health, or to sound with judicious restraint the eugenic note. For a masterly introduction see Downing's *Unto the Third and Fourth Generation*, 1918.

(6) The simple stories of the *Heroes of Science* told to the junior classes must now have their counterpart at a higher level. It enlivens and broadens the discipline, which can never be *easy*, to know as persons some of the great discoverers.

(7) The teacher who "would gladly teach" is desirous that his pupils should be thorough, attaining a certain confidence and a high standard of workmanship. Therefore he is apt to be impatient with ambitious schemes and with those who talk big. His desire is obviously sound, but it is a little apt to defeat itself. In our teaching are we not wont to be too timid in regard to the great ideas of science? When we have good material, as often happens, should we not go mountaineering now and then, when we and they are in the mood, and try to give them glimpses of the promised land with which we refresh our own eyes?

It is beyond our scope to give even outlines of courses of instruction. We may refer to *Science in Secondary Schools*, *Brit. Association Report*, 1917, pp. 123-207, and to the *Memorandum on Nature Study and the Teaching of Science in Scottish Schools* (Scotch Education Department, 1908, Cd. 4024).

### § 9. In Colleges and Universities

It is for colleges and universities, as trustees of the higher learning and laboratories of educational experiment, to be ever reconsidering their courses of instruction and the methods employed. The universities have evolved through mediæval, ency-

clopædic, Germanic, and other phases, and the perennial problem is to adjust intellectual discipline to the growth of knowledge on the one hand and the changing social conditions on the other. What we have to suggest is purely tentative. It is based on a recognition of a number of growing points, which give promise of becoming vigorous shoots.

(1) One need not dwell on the conspicuous increase in objectivity. There has been an extraordinarily rapid development of practical work, demonstrations, personal verification of lecture room statements, museums, field excursions, and the like. Not many years ago a university professor, giving evidence before a Commission, spoke of taking his museum home in a cab at the end of the session! Nowadays a cab would often be insufficient to hold the demonstration material of a single lecture.

(2) Similarly there has been great improvement in the methods of personal instruction. There are tutorials, discussions, seminars, and so on, rising to an apprenticeship of senior students as fellow investigators. There is closer personal association of teachers and taught, though this is still sadly limited by the large size of many of the classes. The ideal student is no longer the one with the greatest capacity for absorption on the one hand and ready regurgitation on the other: the student is now encouraged to personal activity and independence. Examinations have largely ceased to be Chinese memory tests, they are rapidly becoming well thought out means of estimating mental efficiency. For pros and cons see P. J. Hartog, *Examinations and*

*their Relation to Culture and Efficiency* (Constable, 1918).

(3) A visitor to classes of to-day, analogous to those which he attended in his youth, is struck by many differences. In some cases, *e.g.* chemistry, the metamorphosis is so great, that he can hardly understand the terms. In other cases, *e.g.* biology, ideas are dominant which were only on trial fifty years ago. Equipment and methods have changed for the better. But there is another transformation which the visitor cannot fail to notice, though in some classes more than others: the invention of printing has been recognised, the encyclopaedic ideal has been discarded, the teacher no longer tries to cover the whole subject, his aim is to give keys, not treatises, to illustrate methods and principles.

(4) A development that promises educational progress is the turning of attention to the history of the sciences and to the works of the great discoverers. This is only incipient in Britain, but it is full of promise. In most civilised countries, and notably in America, there are professors of the history of science; they are wanting, Mr. Marvin tells us, only in Great Britain and Turkey. But what is perhaps more desirable is that the course of instruction in connection with each and every science should include a discussion of the history. "Some knowledge of the history and philosophy of Science should form part of the intellectual equipment of every science teacher in a secondary school" (*Science Report*, p. 33). The reasons for attaching importance to this are not far to seek.

The history of a science is a study in intellectual



development. \* It shows how great discoveries were made, sometimes with the brusqueness of genius, like mutations, sometimes by minute increments, like Darwinian evolution. The history of a science shows us the antiquity of man's study of the fundamental problems, leaves us grateful for the resoluteness with which darkness has been gradually chased away, warns us against the recrudescence of old errors and against the risks of not paying homage to the old masters.

In a bay of the gallery of the Bodleian Library in Oxford, Dr. and Mrs. Singer have begun a collection of standard works on the history of all the sciences, and have established a centre for relevant historical research the first fruits of which are of high interest and promise. Mr. Marvin comments on this in a very stimulating article, *The History of Science, Positivist Review*, August 1918, p. 1817.

Here is another meeting-place of science and the humanities.

(5) From the study of the history of the sciences there naturally arises a sense of their correlation. They are all the outcome of applying certain methods to certain abstracted aspects of things, and they form a congruent whole. The attainment of anything like an allround or synoptic view demands the correlation of the sciences and of more besides, for the sciences, it has been well said, are like broken pieces of a mirror, which philosophy seeks to unite. It is here in particular that a university should crown the work of the schools. Many a student remembers how his whole intellectual life was illumined when he realised the idea of a hierarchy of the sciences, all contributing to an

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elucidation of the order of nature and human life within it; or when he saw what the correlation of the sciences means. New life has often come to a science through the establishment of a new contact or correlation with another science, and the same is true in the intellectual development of the individual. It is thus that discoveries are often made. In short, the sciences are most scientific when they are most correlated, for they mutually correct one another, and our appreciation of the depth of reality is enhanced. Without this the sciences may harm science. Here we venture again to call attention to geography, which in its modern form is a synoptic science of the highest educative value. In this connection, too, the great educative value of having, in each scientific department, short courses, adapted to the wants of students working along other lines, should not be overlooked. Professor P. G. Tait's well known course on *Recent Advances in Physical Science* and the Oxford course on *The Methods of Science* are two fine models.

(6) Another desirable new departure, as it seems to us, is the orientation of certain courses of scientific instruction to particular immediate ends. The abstractly perfect course of lectures and laboratory work is probably one which is adapted to the training of workers who will become discoverers of new knowledge. On all sides, however, this is departed from in the elementary course of lectures, which is adapted for students who attend the course with the more or less conscious desire of getting a liberal education.

What we wish to suggest is an extension of this recognition of diverse ends, so that, for instance, there

should be courses of botany and zoology, chemistry and physics, specially adapted to the needs (not synonymous with desires) of medical students, of agricultural students, and so on. There can be no doubt that these specialised classes, sometimes replacing, sometimes following, the general course, are very useful for their immediate object; moreover, just because of their practical relevancy, they give the student a sense of the importance of science which otherwise he often misses until it is too late. There are some who detect in these specially oriented courses and in analogous suggestions the cloven hoof of a sordid utilitarianism and the death knell of discovery. But the ark of science has a stable equilibrium and the human mind is not so delicate as some seem to believe. After all, education is surely to help us to greater efficiency as citizens,—an end never in our history as a people more urgent than now. What is done or proposed is simply that, for particular purposes and classes of students, scientific principles and methods should be illustrated by the selection of material which has a particular interest or relevancy. There need be no lack of thoroughness in a course of chemistry for medical students; there need be no sciolism in the course of geology for agricultural students. And if there is a risk of the extraordinary fallacy of trying to teach applied science apart from pure science, this may be counteracted by a short excursus into the history of the science, which will prove up to the hilt that almost all the great discoveries of practical importance rest on great discoveries in abstruse theory.

We venture to suggest that when the needs of the

times force upon the more serious attention of universities such subjects as agriculture and forestry, geography and commerce, the wise outlook is not that of those who give them houseroom grudgingly and belittle their educational value; it is that of those who recognise them as grafts which may improve the whole tree, and who seek to make the most of them, to link them to other disciplines, to enlarge their ambitions, and to humanise their aims. Similarly while school instruction aims at helping the development of the whole nature, not at facilitating juvenile productivity, there is no need to make a hard and fast antithesis between vocational and general training. Should we not rather seek to include, expand, and sublimate the vocational interest, especially with the older children?

(7) No one now supposes, unless for a bad quarter of an hour, that a university is a building or even a closed corporation. It is to be thought of as a "service," devoted to the custody and diffusion of the higher learning and to the discovery of new knowledge, devoted, in short, to Pallas Athene. Plainly, therefore, it is for a university to look out for and, after due testing, link to itself all new endeavours of merit, such as the Workers' Educational Association, to discover and incorporate outside workers and thinkers of distinction, to help and be helped by extramural societies and associations, and to integrate with itself the whole teaching profession.

If it be true, as Professor John Dewey says, that "the future of our civilisation depends upon the widening spread and deepening hold of the scientific habit of mind," it becomes an urgent duty on the part of

the university representatives of science to think out and illustrate methods of effecting this,—a much more difficult task than that of diffusing scientific information. It is of critical moment, that the democratic movement should be not only informed, but educated, habituated to face the facts, to weigh evidence, to evaluate conclusions, whether reached or imposed, which are so often tarnished with prejudice and personal desire. But this good spirit cannot become resident without intellectual prayer and fasting, without discipline in scientific method. “Nowhere are there greater opportunities for developing that questioning, impartial, problem-solving attitude of mind, which must obtain if truth and sanity are to rule the world” (see article on *Value of Science*, *Science*, 1918, p. 477).

(8) As scientific discipline deepens, its methods become more and more analytic, and the provisional character of many of the great synthetic generalisations becomes more and more apparent. But analytic research is apt to become a preoccupation; and the difficulties of synthesis are apt to engender a mood of agnostic caution. So it comes about that there are, for instance, biologists to whom the mere mention of a genealogical tree is as a red rag, though the reality of the descent of which the genealogical tree is a tentative graph is indubitable. For the teachers and advanced students this mood may be wholesome enough for a time, just like a period of asceticism, but it requires its counteractive. In younger students it is apt to produce frostbite. Therefore, it seems to us, there is need at the highest levels to go back to the beginning again, to the allround outlook of the

juvenile nature study. It has been shrewdly said that "if Nature Study is scientific education rightly beginning, then the higher ranges of scientific education should show Nature Study naturally developed." In concrete terms, the botanist must be ever passing from his laboratory to the field and garden; the zoologist from his microtome to the shore, and from his museum to the farm; the geologist from his petrology to scenery; the chemist and physicist to meteorology and manufactures, and all the manifold ways in which matter and motion are brought into the service of life. And with the transition from the laboratory to life as it is lived in nature, from analysis to a deepened view of the unceasing flux and of the web of life continuously unravelling and weaving itself again, from the detachment of the scientific cloister to a recognition of a cosmic drama in which man must play his part, there may revive an impression of realities which are beyond science in the strict sense, a conviction in any case of the need of a synoptic view which will include not only the world without but the world within. This brings us in conclusion to say a little in regard to science and the humanities.

#### § 10. *Science and the Humanities*

The chief question here is as to the relation between discipline in the natural and physical sciences and discipline along other lines, historical, literary, philosophical and the like. No one can seriously maintain that, as the world is to-day, a man is more than partially educated, who cannot find his way about

in both the domains, scientific and humanist: that, if man is a rational being, the two disciplines can be other than complementary. To set up an antithesis is false and mischievous. When two factors are essential to a desired result, in this case a liberal education, it is idle to discuss which can be the more readily dispensed with—idle especially, when the national need for more efficient, which includes better educated people, is urgent. Every one who is not hopelessly selfcomplacent must admit that for his own life he would desire more of *both* disciplines—of that which, on the whole, deals with the outer world, and of that which deals with mankind and human history, and with the expressions of the developing human spirit in literature, art, philosophy, and religion. There is no sense in trying to make things that are different appear as though they were the same, and we do not pretend that discipline in science and discipline in the humanities are interchangeable. The contrast corresponds fundamentally to a dichotomy of temperament, between the more subjective Platonist and the more objective Aristotelian. But it is useful to notice that we are not dealing with ideatight compartments. On the one hand, the student of the humanities often uses scientific methods; the historical study of man and his selfexpressions must include science. The advance of science, for example, by Copernicus and Darwin, has profoundly affected human ideasytems and human endeavour. Man cannot be studied apart from nature, which, among other things, supplies the stage and scenery of his drama.

On the other hand, there is a science of man and there will be a science of history. Science has had a history and is in many respects a social phenomenon. An understanding of the world without, in geography for instance, throws a strong light on much that we call human, from migrations to morals. Science may help to guide goodwill; there is in the pursuit and in the discoveries of science much to stir the imagination and delight the æsthetic sense. Most important of all, perhaps, is the fact that, in his resolute quest of understanding, the scientific investigator is of like spirit with the humanist. As Professor John Burnet has said, "The study of science for its own sake is emphatically humanistic." We may refer here to Mr. J. K. Robertson's interesting article, *Pure Science and the Humanities* (*Queen's Quarterly*, xxvi., 1918, pp. 54-65). The issue that really concerns us is to make clear to ourselves what we expect to gain from each of the two great partner disciplines, and to see that we get it. From *both* we hope to gain habitual ways of looking at things and an enrichment of our inner life, occasional, if not habitual, companionship with great thoughts and great examples.

But, more specifically, what do we look for from the one, and what from the other? The humanist discipline cultivates our sense of the higher values, the true, the beautiful, and the good; it enables us to appreciate what these have meant for mankind and for individual men; it gives us unforgettable glimpses of man's nobility; it fills the mind with great thoughts and memories of great deeds; it engenders a calm patience and a broadminded toleration; it favours an indefin-



able *douceur de l'âme* ; it strengthens into a stream the rill of higher life; so that our lower impulses are held as an undercurrent. The scientific discipline gives us a glimpse of the world as an ordered universe on a grand scale, and leaves us at least "tentative cosmists"; it cultivates our sense of wonder and keeps it fresh; it gives us sobering vistas of immensity in space and time; it supplies us with the evolutionist master key which opens the doors of hope; it engenders a love of accuracy and the habit of trying to get at the facts. Above all "the kernel of the scientific outlook is the refusal to regard our own desires, tastes, and interests as affording a key to the understanding of the world" (Bertrand Russell, *The Place of Science in a Liberal Education, in Mysticism and Logic and other Essays*, 1918, p. 42). What we are driving at may be illustrated by what the distinguished mathematician whom we have just quoted has said of mathematics. "The true spirit of delight, the exaltation, the sense of being more than man, which is the touchstone of the highest excellence, is to be found in mathematics as surely as in poetry. What is best in mathematics deserves not merely to be learned as a task, but to be assimilated as part of daily thought, and brought again and again before the mind with ever-renewed encouragement" (*o.c.* p. 60).

The fact is that for the depreciation of scientific discipline as compared with humanist discipline, we teachers of science are ourselves in great part to blame. As the *Report on the Position of Natural Science* says (p. 7): "How valuable it may be in

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opening the mind, in training the judgment, in stirring the imagination and in cultivating a spirit of reverence, few have yet accepted in full faith." For some of us in our preoccupation have allowed the humanist side of science to remain unilluminated, and others have been too confident that good wine needs no bush. In this and in other connections we require to illustrate with fresh conviction, from elementary school to university, the significance of Spencer's aphorism, "Life is not for Science, but Science for Life:" for life, in the sense that "knowledge is foresight, and foresight is power"; for life, in the sense that the people perish for lack of knowledge and that science gives guidance to goodwill; for life, in the sense that scientific inquiry is the expression of one of our innermost needs and endeavours; for life, in the sense that though science may never lead us to a knowledge of truth, its face is set toward the goal where truth is to be found.

The question is not between the discipline to be got from science and that to be got from the humanities. The practical question of to-day is how to secure better teaching and better learning, so that the rewards of both disciplines may be diffused in our midst in the development of more efficient citizens. This, as it seems to us, is not a matter of desirability merely, but of survival. For as Lord Bryce has said (*Cambridge Essays in Education*, p. xix): "In the stress and competition of our times, the future belongs to the nations that recognise the worth of Knowledge and Thought and best understand how to apply the accumulated experience of the past. In the long run

it is knowledge and wisdom that rule the world, not knowledge only, but knowledge applied with that width of view and sympathetic comprehension of men, and of other nations, which are the essence of statesmanship."

## IX

### TECHNICAL EDUCATION

It would be difficult to give an exact definition of what is covered by the expression "Technical Education," but the aim of technical education can be simply stated. This aim is the development in a nation of the highest possible industrial efficiency. It might well be argued that all education rightly understood will among other things produce industrial efficiency, but technical education is confined to this one object, and consequently admits of a very definite test as to whether it is rightly conducted. It demands a sound system of general education, which lies out with its province; and the proof of its success is to be found in the increased industrial efficiency of the nation. If it cannot show adequate results for the expenditure, then the State had better employ the funds for some other purpose. Technical education stands or falls by the success with which it can meet this definite practical test. By its very limitation, therefore, it is an easier matter to evolve an efficient system of technical education than an efficient system of general education. The aim is definite, the test of efficiency is practical.

If a manufacturer, for instance, is persuaded to introduce a new machine at considerable expense, and finds that he has not increased the efficiency of his methods of manufacture by so doing, he will purchase no more of the machines. In the same way, the nation which finds that the money devoted to technical education does not result in increased industrial efficiency will be justified either in re-organising its whole system of technical education or in devoting the money to some other purpose.

A very good instance of this is the history of the Science and Art Department. Growing out of the Great Exhibition of 1851, the department was created to improve the industrial efficiency of the nation by organising a huge system of art and science teaching. As the result of experience it was found to have failed in its original object. The art classes became mere manufactories for turning out a new generation of teachers, and had little or no influence on industry, and the science classes failed to get in touch with the practical needs of the workshop. An elaborate system of papers and paper knowledge grew up, which had little bearing on practice. The famous story of the granting of first class certificates in navigation to a class of girls in an inland school may not be true, but like many legends is truer than the bare facts. To-day a system of technical education must stand or fall by the simple test of real benefit to industry.

It is evident that if industrial efficiency is our object, we must consider many different branches of training and many different types of students,

from the master to the workman, and we must also include in our survey the relationship of this training to the pursuit of pure science and the highest manifestations of architecture and design. A research in an abstract and abstruse department of mathematical physics may revolutionise the method of conducting an apparently simple handicraft; a problem from the workshop may open out a new line of pure scientific research. The simplest domestic objects require for their right making all we have that is best in art, in order to obtain beauty of design and consequently efficient adaptation to the purpose for which they are made.

Our survey must, therefore, include the workman at the bench, the student of science in the laboratory, and the artist in the studio. Before entering on this complex field of inquiry in more detail, a word may be said in defence of technical education as a worthy pursuit with its own ideals. Criticism comes from more than one quarter. Technical education has been denounced by some of the representatives of labour in the past as a scheme, by means of the funds of the State, for turning out a more efficient workman merely to swell the profits of the employer, for producing at the expense of the taxpayer an instrument for increasing the wealth of the manufacturer. It is, I think, now generally recognised that this view is no longer tenable.

The organiser or teacher engaged in technical education has no part or lot in the question of the fair distribution of the products of industry. This matter lies entirely outside his province. His

business is to make the product as good as possible by training to the best of his ability each in his sphere—the workman and the employer. It is his duty to see that the cake is the best possible cake that can be made. The ultimate division of the cake into fairly adjusted portions is in no way his affair. It is evident that, however that division may be adjusted, it is better to have a well made and palatable cake to divide.

From quite another point of view technical education has been regarded as a somewhat sordid business dealing with mere material objects and possessing no ideals. This is apt to be the view of the man who has never laboured with his hands, or come in contact with the basic facts of life. It has been his fortune—we do not say his good fortune—to be set apart in the commonwealth for special purposes, and he has never grasped the fact that he is so set apart and fed and clothed only from the surplus stock of provisions produced by the labourer in the field and in the workshop. Even in the old days a hermit in his cave, devoted to divine contemplation and lifted above the things of this earth, had to depend on the piety of some toil worn peasant for his daily pittance. The complexity of modern industry, the sordid and ugly environment, the degradation of the workman to a machine, the mad scramble for wealth, and consequent sacrifice of the product for profit, have made us lose sight of the fact that good work well done, whether in the growing of wheat or in the making of a pure chemical product, is of itself an ethical act. This truth, under the

reformed conditions of industry, which are at last in sight, will soon once more be accepted.

We Britons are as a race essentially makers of things, and, from the humblest worker to the head of the firm, enjoy the production of a well made engine and the planning of a well organised workshop. It is the duty of those engaged in technical education to aim at setting up a high standard of production, to teach how the best can be made, and not to be reduced to the propagation of inferior methods which may seem to result in a temporary cheapening of production. Nor is it the business of those engaged in technical education to consider whether this or that class or individual will profit by their labours. Increased efficiency in production benefits the whole nation, and technical teachers must therefore take a broad view of their function. The happiness and wellbeing of the race and the individual depend ultimately on work well done and the ethical satisfaction and contentment produced by honest labour; and, so long as this ideal is not lost sight of, those engaged in technical education are fulfilling a worthy purpose in the commonwealth.

To pass from this digression, let us now consider the subject in more detail, beginning with the training of the workman at the bench. Under the old conditions of industry, before the introduction of machinery and the elaborate specialisation of production, the apprenticeship system supplied an efficient training for the craftsman. Under modern conditions, this is no longer the case, and the apprentice has not the opportunity of learning his craft as a



whole and consequently being able intelligently to handle it in part. The experience in workshop methods gained during the War has certainly shown that, with the great development of machine tools, a very short training seems to be all that is necessary to turn out, in many cases, workmen who prove efficient for a limited sphere of work. But it is very doubtful if ultimately this method of high specialisation in training will prove advisable. With the rapid changes taking place in industrial methods, it is essential that the future workman be able to adapt himself to the new conditions and take over the control of new types of machines and quickly master new processes. For this purpose he requires a broad and scientific training in the handicraft he professes. If he has been thoroughly trained in principles and has thoroughly mastered the manual practice of his craft, on which all machine processes are based, he will be intelligent and adaptable and will quickly master new conditions. This training can no longer be obtained in the workshop and must be obtained in the technical school.

My belief is that ultimately it will be found best to devote the whole of the years of adolescence to the technical school. The conditions produced by the War have shown that it is possible to train entirely in the technical school in a few months, on special lines, girls who can then pass straight to responsible work in the workshop. The technical schools have found that they can adapt themselves to these new demands, and have learnt much in the endeavour to meet the new requirements.

The new Scottish Education Act is a compromise between the two conceptions of training, the old and the new, and, when put in force, will supply valuable data as to the right lines of future development. Under this scheme eight hours a week in the daytime will be secured for the technical school to be devoted to general and instructional training.

A broad training for the future workman is very desirable for other reasons. If he is content to remain at the bench he will be a better workman, but if he has special aptitudes which will fit him to rise to more responsible positions, he will be able to do so. Therefore, during the period of adolescence, if he shows special aptitude, the system must be so varied as to enable him to devote himself to a more purely scientific or artistic education, and also later in life, if he is able to do so, to return to the technical college or the university. Our system must be so elastic that we can train the best brains for the highest work in whatever section of the community they may be found.

It is difficult to exaggerate the importance of the new principle embodied in the Education Acts for England and Scotland by which compulsory training for young persons during working hours is made operative. As has been already stated, the modern workshop no longer provides an adequate training for the apprentice by which he can become master of his craft, and the technical school has had to be satisfied with scraps and snippets of time in the evening and on Saturday afternoons and with tired pupils, incapable, in very many instances, of sustained

effort. The State has been playing with the question of systematic technical education and wasting large sums of money with very inadequate results. Those responsible for technical education have long felt that no real progress was possible under the former system. The claim of part of the time of the work-shop for systematic training is only just and right, and for the first time puts technical education in its proper place and gives it well deserved opportunities.

The results which will be obtained will, one feels confident, be remarkable. Every one responsible for education longs to deal with the young mind between the ages of fourteen and eighteen; each year shows a rapidly increasing mental capacity and ability to grasp principles. They are the most fruitful years intellectually, and the mental gain and the moral discipline which the pupil will obtain, as a result of systematic study, will be very marked.

The new scheme is only a beginning, but it is a recognition of the right of the young of the working classes to education during those years, and a recognition also of the fact that technical education and a thorough knowledge of a handicraft are not matters to be despised, but worthy of the utmost consideration of the State. Whether regarded from its purely material aspects or from its importance as establishing the only possible principle upon which the great industrial democracy can attain a position of stability, the claiming of these hours for education marks the most important advance since compulsory elementary education was first introduced.

The training of the technical expert—engineer,

chemist, or designer—requires a more elaborate and expensive machinery, associated with the central technical colleges, art schools, and universities, and it is here that one of the greatest defects of our existing organisation requires to be pointed out. Ultimately the progress of industry depends upon scientific research and artistic development. In neither direction has proper provision been made in the past.

To deal with the promotion of scientific research, I draw no distinction between pure and applied science, as no such distinction can be drawn in practice. The first essential is the pursuit of science for its own sake as a pure branch of knowledge. Even among educated people in this country it is quite common for them, if told of some fascinating discovery in pure science, to ask, "Of what use is it going to be?" or, in other words, is some one somehow going to make money out of it. The pure lamp of science has been kept burning in our midst owing to the devotion and idealism of our men of science in spite of every discouragement from the people and the State. The "governing classes" are profoundly ignorant of science; they move through a world of which they know infinitely less than Aristotle knew. They regard the profound and reverent study of God's work as revealed in nature with an ignorant contempt. That love of knowledge for the sake of knowledge which inspired the Greek civilisation is not understood by the very men who have received a classical education. They do not see that the man of science is carrying on the tradition of Greek culture

to-day. Devoted to the pursuit of knowledge, to the reverent because honest investigation of the laws governing the world in which he lives, he is constantly benefiting his fellow creatures by the by-products of his researches. It is not his fault if his fellowman turns his discoveries to terrible uses and devotes them to purposes of destruction instead of using them as blessings. The lamp of science, research for research's sake, must be kept alive, by giving to the investigator sufficient leisure and sufficient resources to pursue his work. The question put to every professor of science in a university or technical college should not be, How many students have you passed through the mill? but How much have you and the young men working under you added to the sum of human knowledge?

In addition, it is essential that adequate means and encouragement be given to the investigation of the applications of science to industry and to the solution of industrial problems. But even if this be fully provided for, it is not enough alone without the other.

Our universities and technical colleges are understaffed and underequipped to do their most important work efficiently. Fortunately there already exist the germs of organisations by which this matter can be righted. In the first place the universities and technical colleges require large grants from the State, and at the same time the grants must not be made the excuse for a deadening bureaucratic control. The administration of these grants should be in the hands of a body on the lines of the committee which

at present distributes grants to the younger English universities, a body made up of representatives of the universities and higher technical colleges and members selected from the Privy Council, on which the Board of Education should also have representatives. The whole financial support of the institutions, apart from endowment, should be undertaken by the central government acting through this committee, and in this way it would be possible to get an enlightened development of the institutions, and the commonwealth would benefit a thousandfold. Local governing bodies representative of science and industry could be established for the technical colleges to administer these grants.

The Department of Scientific and Industrial Research recently established has a great future before it. It has pursued an enlightened policy in undertaking researches for the common benefit of a whole industry and in striving to establish associations of manufacturers, which, acting in conjunction with the Board, will organise and provide industrial research. In addition, the Invention Department of the Ministry of Munitions and the scientific staff of the Department of Explosive Supply have shown how much can be done to guide and direct the inventor, and save him from exploitation by the city financier, in so many cases the destroyer of valuable inventions, and to develop industry on scientific lines.

These organisations, set up temporarily for war purposes, should be widened in scope and incorporated in a permanent scheme, along with the Department of Scientific and Industrial Research, so as to promote

invention and research. Under proper regulation the professor at the university and technical college should be encouraged to undertake industrial research by measures that will ensure to him an adequate reward. Invention and the capacity for original research, the most exhausting and engrossing form of brainwork, are rarely present in the average brain, and require every encouragement and stimulation instead of the discouragement they receive under our present educational and industrial system.

These are the broad lines on which development is required, and it remains to discuss the organisation of technical education in detail as applied to a particular city. In order to show in a practical way how this can be done, I propose to take the city of Edinburgh as an example.

Edinburgh has at present the following institutions engaged in technical education: in the first place there is the university with its departments of pure science and of engineering and agriculture. Round the university three institutions have grown up dealing more directly with technical education, the Heriot-Watt College, the College of Agriculture, and the School of Art. In addition, under the school board, evening classes have been established in industrial and commercial subjects, and workshops built. The two colleges and the school of art have both day and evening teaching, the day teaching being of university standard, and the evening teaching supplying the advanced instruction, whose elementary basis is provided by the school board. Now that the Education (Scotland) Bill, 1918, has passed

into law, day teaching of all young persons between fourteen and eighteen will gradually be established, and a new education authority set up. It is with the organisation of that day teaching that I propose in the first instance to deal, for it is in itself of the utmost importance, and is the beginning of the new system which will ultimately revolutionise the education of the masses of the people, and usher in the State of the future based on an educated democracy.

At present, the relationship between the evening classes under the school board of Edinburgh and the central institution is not very clearly defined. The latter, because it provides the higher teaching, has been able to exercise some control over the elementary teaching with the willing consent of the school board, and by the appointment of an organiser, the visiting of classes, the revision of examination papers, and conferences between teachers under the board and its own staff has been able to guide the whole course of instruction from the elementary to the advanced stages. There can be no doubt that this supervision by consent has been most useful. The staff of the college have freely given of their time for this purpose, and the school board has thus had the advantage, free of cost, of the advice and help of the best experts in their respective subjects in Edinburgh. The school of art under a similar arrangement has been able to do most useful work. This general supervision is not confined to Edinburgh, but extends to the neighbouring counties included in the district which is allotted to the particular central institution.



Under the new education authority this co-operation and supervision should be extended and put on a permanent footing as part of the scheme of the Scottish Education Department, and should include not only the Heriot-Watt College and the School of Art, but also the university, thus bringing the university directly into contact with the educational needs of the great mass of the workers.

If we imagine the eight hours a week available roughly divided into three portions, one portion would be for general education, one for the scientific and artistic principles underlying the industry which the young person had selected, and one portion for handicraft training. The most difficult problem in dealing with these young people will be their proper grading so that all shall get some benefit and the best get the highest possible benefit from the education provided. This will necessitate the running of parallel classes suited to different standards of attainment, and the time table should be so arranged that a student who has no aptitude for theoretical training, should be allowed to take two instead of one workshop period, and a student who shows special aptitude, should be allowed to take two periods in the scientific division in place of the workshop period. In the technical subjects the final years would be taken in the technical college and the school of art.

The compulsory training up to eighteen will not result in the abolition of evening classes. Their usefulness will be much increased as the students coming to them will have reached a definite age and have passed through a definite course.

Of those completing their course at eighteen, some will be deemed worthy of proceeding to a full day course at the technical college of the university. They will be provided with bursaries, and will proceed to take a preliminary year of study before entering on a degree or diploma course. The greater number will continue their education in evening classes provided by the central institutions.

The education authority will require to establish committees for the supervision of the whole scheme of education, and on the committees should sit representatives of industry, masters and men, professors from the university, technical college and school of art, and representatives of the teachers employed by the education authority. These committees should be essentially expert committees, using the word in its widest sense, and to them should be entrusted the working out of the whole scheme.

In order to play its part, the university will not only have to take a lively interest in the teaching, but very possibly have itself to provide the instruction in the last year of study in certain subjects, such as history and its cognates.

In addition, the conditions of entrance will have to be modified for technical degrees, and new technical degrees provided, in the subjects of mining, architecture and design, and different branches of technical chemistry and chemical engineering. Close co-operation by means of schemes of affiliation between the university and the Heriot-Watt College and School of Art must be provided, as it will require the well organised resources of all three institutions working

in closest co-operation to meet the needs of the coming time for sound technical education.

The whole scheme for the city may now be shown in summary. The control of the education up to eighteen would be under the new education authority, and administered through special committees arranged as follows :

#### ORGANISATION UNDER THE EDUCATION AUTHORITY

A main committee managing the day apprentice classes consisting of—

Representatives of the education authority : representative employers and workmen.

Representatives from the governing bodies of the university, Heriot-Watt college, college of art, and commercial college (if founded).

Representatives of the teaching staff of these institutions.

Representatives of the teaching staff of the education authority.

Under this general committee would be sub-committees for each trade containing representatives of the trades and the professors or lecturers dealing with that subject and one or two of the teachers under the education authority.

#### SCHEME OF EDUCATION FOR THE COMPULSORY YEARS

General education, specialising more particularly in historical and economic sub- jects.	Scientific and ar- tistic education as applied to the particular industry.	Workshop training.
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Parallel courses of study to suit different aptitudes would be provided, and arrangements made by which a student would devote more time either to the workshop or to the scientific and technical training.

- At the end of the compulsory period the student would proceed either to

Evening classes,	or	A preliminary year of study with
		a view to a diploma or degree.

### THE PROVISION OF STAFF AND EQUIPMENT

Staff and equipment would be provided for the earlier years by the education authority in its own workshops and classrooms, except where it was found possible to pool workshop accommodation with the central institution, or to provide the whole education for the more important trades in special institutes established by that trade. The staff and equipment for the advanced teaching in the compulsory period would be provided by the Heriot-Watt College and the School of Art, and in addition the teaching and equipment for the preliminary year of study for diploma and degree students in connection with the university. Whether the university itself should undertake part of the teaching during the compulsory period is a difficult question with much to be said on both sides. Personally I am in favour of the university taking a share in the actual teaching in the final year.

### FINANCE

The cost of education would be met out of endowments, the rates, and imperial grants, and in addition an effort should be made to obtain contributions from the local industries. The education authority would be responsible for the whole expenditure during the earlier years, and, in addition, would make grants to the Heriot-Watt

College and School of Art toward the expenses of the later years. The cost of degree and diploma education should be entirely met by imperial grants, and should not be a charge on the rates, as it is a matter of national rather than of local importance.

We can now pass from the organisation required in a large town to that required throughout the country. For this purpose Scotland naturally divides itself into four districts, centring round the four universities, the central institutions, and the three agricultural colleges. As the education areas are to be large, there should be no difficulty in appointing an education committee for each of the four districts on the lines already laid down for the city, representing education authorities, universities, technical colleges, and the industrial interest. On this committee will also sit representatives of the governing body and staff of the agricultural colleges, as they will have to be largely responsible for the provision of peripatetic teachers for agricultural education. The natural centres for technical and agricultural education will be the existing higher grade schools on account of their already well chosen geographical position. The arrangement of the instruction for short consecutive periods, and the provision not only of peripatetic teachers but of travelling motor vans with the necessary equipment, will materially contribute to the solution of the rural problem. The district committees and the central city committee will require to work in the closest co-operation, as students will increasingly be transferred from one to the other; and the whole system must be carefully

co-ordinated. Probably the best method of securing this would be to have the same secretary for both. The whole scheme for Scotland can now be put down quite briefly as a result of this preliminary discussion.

The distribution of imperial grants to universities and to central institutions for the provision of university and higher technical education should be in the hands of a committee of the Privy Council which should include representatives of these bodies, and of the Scottish Education Department.

The government of the four universities may remain, as at present, in the hands of the university courts which, however, might well be enlarged so as to include representatives of industry, both employers and workmen, and might be relieved of the details of administration by means of standing committees. The government of the central institutions should be placed in the hands of *ad hoc* bodies representing the local education authority, industry, and the university courts. In this way the higher branches of technical education will be provided for.

The general technical education of the workman is placed in the hands of the new education authorities by the Education (Scotland) Act.

In order to carry out its work efficiently the education authority should, in the large towns, appoint expert committees on which industry, the universities and the central institutions should be represented, together with such sub-committees as may be advisable. The rest of Scotland should be divided into four districts to deal with the technical education in the counties and in the smaller towns. The expert committees for these four districts should likewise have representatives of the education authorities, industry, universities, and central institutions, and, in addition, such sub-committees should be appointed as may be required either by industrial or local conditions.

The educational authorities should be responsible for the

financing of this portion of technical education, including grants to the central institutions and the universities, if they undertake part of the teaching.

These are a few suggestions for reorganising an efficient system of technical education throughout Scotland. Whatever the means adopted, the passage of the Education Act makes possible at last the establishment of a real system of education for the worker, and for the first time brings within our vision the possibility of an educated people, equipped not only for industrial purposes, but for the duties of citizenship in a great democratic commonwealth.

## X

### TEACHING AS A PROFESSION

DEEP and widespread concern about the value of education and the results of genuine teaching in relation to national progress is no new affair. Nor is its increase in intensity due altogether to military necessities, to social unrest, or to the pressure of economic stringency. These are more or less passing phases of the nation's existence now happily being eased. It is rather the inevitable outcome of a long felt and deeply rooted conviction that education in the widest and truest sense is the sure means of making for social uplift, for personal and public usefulness, and for the clear recognition of what is right, what is good, and what is beautiful. And equally strong and enduring is the opinion that teachers' claims to public esteem, adequate reward, and professional advancement constitute the crux of the whole matter.

An Act of Parliament passed in the reign of George III. (43 c. 54) declared that schoolmasters were "a body of men, whose labours are of great public utility." It is also on record that a parliamentary Commission was empowered in 1816 to investigate the state of education in Scotland, and



that it declared "that from the smallness of the salary in the parochial, and of the fees in the private, schools, the style of education was found to be very low, and the office of a schoolmaster to be anything but desirable either from its respectability or its emoluments, to men of education and talents." Be it further observed that "seventy years ago the College of Preceptors (in England), with its grades of Associate, Licentiate, and Fellow, was established with the object of raising the standard of the profession by providing a guarantee of fitness and respectability" (*Cambridge Essays on Education*, p. 223). Again in Scotland, in 1847, the Educational Institute of Scotland, as a warrant for its foundation, issued this preliminary statement: "As the office of a public teacher is one of great responsibility, and of much importance to the welfare of the community: as it requires for its right discharge a considerable amount of professional acquirements and skill: and as there is no organised body in Scotland, whose duty it is to ascertain and certify the qualifications of those intending to enter upon this office, and whose attestation shall be a sufficient recommendation to the individual and guarantee to his employers, it is expedient that the teachers of Scotland, agreeably to the practice of other liberal professions, should unite for the purpose of supplying this defect in the educational arrangements of the country and thereby, of increasing their efficiency, improving their condition, and raising the standard of education in general."

Professor John Stuart Blackie, in a letter to the citizens of Aberdeen (1846), says, "The time is come

when all classes are awake to their gross sins of omission in the matter of education in Scotland. We can no longer plead such absolute poverty : ignorance no longer affords an excuse for indifference." In the same letter he tells us to "begin with the schools, especially the parochial schools; make the profession of a schoolmaster respectable. For herein lies unquestionably one of our great public sins as a people—we prate about our parochial schools and we starve our parochial schoolmasters." The Right Hon. W. E. Gladstone, in his rectorial address to the students of the University of Glasgow in 1879, speaks of the "new profession, as it well may be called, of the teacher. The first place among the various achievements of social science appears to be due to the organisation of teaching." He speaks of teaching as a weighty avocation, and congratulates the teacher upon the fact that though his office is laborious, yet, in Scotland at least, he works on a willing subject.

The past forty-five years bear witness to the immense benefit arising from the great enlargement of educational opportunity brought about by Lord Young's Act of 1872 and subsequent amending Acts. To-day we await with high expectations the wondrous educational possibilities of Mr. Munro's Act of 1918. At no other period of our national life have there been such chances for the raising of each individual life and, consequently, the elevation of the whole body of the people as by the enactment of this and of Mr. Fisher's Act for England.

In the present discussion we are chiefly concerned

with the part the teacher is to play in the future : how he is to be selected for his great and responsible duty : how he is to be fashioned for, and maintained in it : how his range of public usefulness is to be extended, and how the great body of educational workers is to prove its value to the nation. Now that the nation, driven by the pressure of public opinion, legislatively acknowledges its urgent need of the teacher, what place as to social position and distinctive reward may be claimed by professional right ? Compared with other professions, what expectations may he reasonably form regarding future prospects of advancement, freedom to exercise his trained intelligence, and opportunity to contribute his full share of public service ?

It is indisputable that in comparison with other professions, teaching has, in recent days, secured, *as far as the standard of general education goes*, a higher quality of recruit than, say, law or medicine. The regulations for the preliminary education, training and certification of teachers in Scotland, first issued by the Scotch Education Department in 1906, bear testimony to this fact. The Board of Education in England has just sent out a similar official order witnessing to its present strong reforming zeal, and its intense desire to obtain, not so much by grants in aid of salaries or superannuation benefits, as by improved higher instruction and better training facilities, the class of person best suited for school work. In the case of teaching we can see that in the past the line of progress has been the deepening and widening of the earlier, cultural, general education

without corresponding attention to the strictly professional or technical side. The opposite may be affirmed of the professions above cited. No change of any consequence has taken place for years in the standard of preliminary attainments required of their entrants, though a great expansion of the specialised, the distinctly technical, course has occurred. In fact, sound teaching which has for its professed object to lay broad and deep the foundations of every profession has lacked in great measure, up till modern times, that which must be characteristic of all professions, viz., possession of a body of scientifically accepted truth, regulative of its efforts as well as comprehensive and well devised schemes of professional preparation in educational doctrine with a direct bearing on actual practice. Thus, though a well articulated set of scientific principles upon which to base teaching skill may at the moment be wanting, and it may not yet be possible quite accurately to say that the teacher is a scientific workman, yet through the already accumulated results of applied psychology, experimental education, and logical method, this want is being rapidly supplied. There are no branches of professional learning that are being more sedulously pursued in every civilised country than those relating to the theory and practice of education. Nor is there any modern scientific literature of purely professional interest more exact or voluminous, especially in Britain, the United States, and Germany; than that dealing with the established laws of mental development in relation to school life. It is sufficient in this regard to allude to the widely known achievements

and writings of Burt and Rusk, Thorndike and Dewey, Meumann and Rein.

We should like, however, in asserting high professional rank for teaching to base our claim on the fact that at every stage of the process, from the kindergarten to the university, the teacher is dealing with spiritual elements, forces that make for the liberalising of life, the strengthening of character, and the creation of stimulating and wholesome ideals. The formative factors which are to shape the individual and to mould society are in his hands, and he must, if he realise his vocation at all, understand thoroughly and completely their nature and functions. In addition to the most liberal culture possible for himself, he must have a clear knowledge of the import and the relationships of the physical and moral aspects of life, how control of them may be established through the discipline of intellectual agencies, and how the spiritual nature of man is quickened by clean living and high resolve. To bring into action these forces most effectively we would urge a more intimate and ever growing union between teachers' colleges and the universities. Our ancient seats of learning are by long tradition and high achievement the centres whence the most potent intellectual influences radiate, and it is in association with them that the almost indefinable privileges, rights, and duties of the professions have been consolidated and taken concrete form. The fact is unquestionable that the establishment of the modern universities of the north and midlands of England has been the chief cause of the rapid

improvement in the education and technical training of a great majority of the teachers of that country. The education committees in conjunction with the university authorities in their several areas have been eminently progressive, and we find that there is how prevalent a corporate spirit of educational keenness distinctly of a professional nature unknown when training colleges and schools were exclusively controlled by denominational bodies. This is true even to a greater extent of Scotland, though the connection is older and the line of progress somewhat interrupted. As late as 1873 Sir Lyon Playfair in his address to the graduates' association of St. Andrews University is reported to have said: "Unluckily Universities allowed profession after profession to slip away from them because they could not escape from their mediaeval traditions. Nothing is more strange, for instance, than their abandonment of the teaching profession which was of their own creation, while the other professions were rather the creators of the Universities. Originally graduates were not only empowered, but were compelled to be teachers. The graduation was the diploma of a teacher, yet the Universities have allowed independent normal schools to grow up around them."

We in Scotland look to that early and close association being re-established and made more vital. There are signs that state control will ere long be confined to purely administrative matters, *e.g.* the distribution of financial aid from the State, according to legislative enactment; the collection and

preparation of statistics and opinion on educational matters required for parliamentary information ; a general supervision over local effort, in order to prevent overlapping, to encourage enterprise, and to regularise and systematise through departmental scrutiny and advice the various schemes of the education authorities designed by each to fit its special conditions and distinctive aims. When this comes to pass, as it assuredly will, the very breath of freedom in a professional sense will envelop teachers and other educational workers. The day has passed for the State's fostering care of education being expended on the minutiae of school practice. These may safely be left to the higher ideals and the strong selfconsciousness of professional pride that now exist amongst teachers of all classes. We are at the time when a ministry of education in Britain must be created—a department of State that has for years been considered essential in most European countries, and is undoubtedly long overdue in ours. There is not even in this country a central bureau for the investigation of educational problems by capable workers, nor is there (outside magazine and newspaper literature) any organisation for the distribution of accepted educational truths. Apart altogether from the enterprise of individual publishers, there is no consistent and continuous plan for the post-academic instruction of the teacher. These are wants that can most effectually be met by state aid and state control with their powerful centralising authority and their abundant resources. In this connection it is enough

to point out how much indebted the educational systems of all Europe are to the periodic publications of the United States Bureau of Education at Washington.

Public opinion will never accord professional status to any calling that does not by its own workers produce systematically new discoveries that may lead to further progress. Research is needed to vitalise methods, to banish mere routine as governing daily school work, to prove the value by scientific experimentation of well worn rules of instruction, and to show how accepted ways of teaching square with the laws of psychological development. Beyond provision for the careful distribution of the national subsidy the true line of state interference in education is the endowment and encouragement of research. Nearly all other matters may be left to the experience and wisdom of a profession which is now attaining most certainly to the dignity of selfgovernment and selfcontrol. This emancipation may not yet be complete because of the diversity of professional interests and the tradition of numbing state supervision, but that it is imminent cannot be gainsaid. The unity which is so apparent now for protective ends might well subserve the higher purpose of co-operation for educational progress.

In every department of work, manual as well as mental, we all admit that there is room for a wider knowledge of scientific bases and practical possibilities. The State has been forced to institute, and is prosecuting most fruitfully, searches and researches in very diverse pursuits. It dare not refuse to follow



the same policy as regards teaching—"that most delicate and difficult as well as most momentous of all offices." The field is wide, and is as yet to a great extent practically unexplored, but the results of modern psychological study are such as to guarantee profit to devoted investigation in educational science. It was long held that the methods of the study of physical science could not by any device be adapted to demonstrate scientific truth in the mental world. That view in light of the facts of experimental education already secured in many directions cannot now be maintained. So confident are modern investigators of the value of the newer methods that much of the older theoretical psychology as applied to education has been discarded. Progress is hopefully looked for from institutions for experimental study and for the collection of literary material of an educational character, *e.g.* the Carnegie foundation for the advancement of teaching in New York.

It is permissible to believe that with the lessening of state control public interest in educational questions will gain in reality. Local voluntary service has not in general been of a high order, and in the cases of small areas it has admittedly been a failure. It would be ungracious and mistaken, however, to attribute this to the constituent members of local education authorities. They have had to face their particular problems under an inelastic system which could take little account of the immense and necessary variety of educational circumstances. They could not possibly realise the intricacy and grave moment of many of the questions at issue which required the

insight of the trained expert, born of special knowledge and lengthy experience. The teachers' counsel, as well as active service, has thus been found to be a necessity of educational effort. There has, in consequence, arisen a call from the country which can be satisfied only by the considered judgment of professional opinion. Teachers are fully aware of this, and are giving freely of their time and skill to the country's service.

If we reflect on the causes that have till now hindered teaching from reaching an assured position among the professions, we shall find that these have been chiefly due to the extraordinary diversity of character and kinds of teaching, the fact that many well intentioned persons with few or no certified qualifications take up teaching as a temporary occupation or as an occasion to add to a meagre income, and also to the erroneous opinion which has long been held that a failure in the clerical profession could make a living by teaching. In Scotland it is well known what business the "stickit minister" mostly turned to. In England the great English public schools are to a considerable extent still officered by teachers recruited from the professed religious classes. In this we see the survival of the tradition of other days. In modern times, to put it very mildly, this cannot have a salutary influence upon the work of teaching. The thing to be deprecated is that teaching is not deliberately chosen by such persons as their life's work; they are not called to it by any natural aptitude, nor do they of set purpose put themselves into conscious and strenuous preparation for it. They

drift into teaching and remain in it until some "delectable charge" is bestowed upon them.

The tendency to look upon teaching as a non-permanent occupation will increase with the greater number of women qualifying for service. This is inevitable because it is natural, and no agitation as to the common professional standing of the sexes can alter it. The tendency may be modified by higher remuneration, and by the infusion of the missionary and selfsacrificing spirit, and, in consequence, the growth of public reverence for such teaching fervour; but it cannot be completely arrested. The temporary outlook is also the cause of cramped and insufficient preparation. A course of professional training extending, as it ought to do, over, say, five years in the case of young women who may have a professional life of only four or five years in duration, is economically unsound and obviously extravagant both on national and on personal grounds. At the present time this is the peculiar problem of the teaching profession, the great preponderance of women workers, though signs are not wanting that similar complications may soon arise in other spheres of professional labour. In the case of the medical profession the situation is already safeguarded by the competent authority of the General Medical Council acting under parliamentary sanction. This council was constituted and in operation before women were admitted to practise medicine, and has control of all matters of professional organisation, conduct, and etiquette. It knows no distinction of sex in its dealings with the members of that profession. To set up a corresponding body

with like powers for the teaching profession has often been urged and might well be tried although the difficulties to be encountered are very great indeed. By far the greatest impediments to the unity of the teaching profession are the multiplicity of the electing, supervising, and training authorities; the grades of service — universities, colleges, technical institutes, and in the various classes of schools, the differing schemes of training, the existence of a state service (carrying with it a measure of security and considerable pension benefits) alongside private, proprietary, and cramming schools, many with untrained staffs, uninspected, not supervised in any way, and in some cases carried on for private gain. To be effective, teachers must speak with a concentrated and undivided voice. There must be unity of aim and harmony of purpose throughout the entire profession if there is to be educational and moral achievement as well as professional advancement. There is no room for the unqualified practitioner, or for the selfish person who, because he is unable to compute how much will accrue to his personal advantage, refrains from membership of his profession's recognised organisation.

It might seem idle to argue that thorough organisation is essential to the establishment of teaching on a sound professional basis, were it not that apathy and culpable neglect of the mechanism necessary to success is so prevalent. We have it on the authority of Sir Lyon Playfair that "the organisation of a true teaching profession in Germany quickened the intellectual life of each of its nations." It is not to

the discredit of that organisation that intellectual eminence obliterated the high moral purposes of all true education. Is that not rather due to the utter neglect of the spiritual element and to the crushing weight and the unquestioned supremacy of a soulless State? All classes of teachers in Germany are bound in a common incorporation which after all is the essence of every professional system. In that country we know that opportunities are afforded for all teachers to extend their qualifications and to rise thereby from the lower to the higher stages of professional rank.

Whilst a good organisation is the potent factor in the protection of professional interests, it is none the less necessary in the public interest. As the widely vaunted assertions of an advertiser anxious only to sell his goods afford no assurance of their quality, so "the self-asserted qualifications of self-constituted teachers are no guarantee of their efficiency." The public must be safeguarded against the assumptions of amateurs, however well intentioned they may be. Again, education of almost every kind is entirely provided for, or largely subsidised by, the State, and must remain so if consciousness of national unity, which is the basis of democratic life, is to be attained. Thus to realise itself and to reach forward to a national ideal, the State must demand thorough organisation in education as a primary necessity of its existence. It cannot afford to rely upon vicarious organisations of an unenlightened character. It must expect to get its ideals upon which to frame its policy from an unfettered profession, selfgoverned and selfadministered. Nothing less is thinkable in the coming

days of durable peace when the free expression of opinion is expected and will be welcomed. Vast extensions of political enfranchisement have taken place. They will make for betterment only in so far as political decisions are the result of considered and mature judgment on the part of the whole electorate; and this they cannot be unless the benefits of a wise educational policy are freely and fully offered. A profession which is not free and selfcontained cannot appreciate the gravity of its national responsibility, nor is it capable of undertaking its plain public duty. The War has brought into being urgent questions connected with adolescent life which are fateful for the race, and must, above all things, be handled judiciously, sympathetically, and with knowledge. Such intimate work as this will involve, is not within the province of any state department. It can be done only by men and women whose bonds of union are those of a truly professional nature, keenness of work for its own sake, an assured position of moderate comfort, and a high sense of the value of its services towards the public weal.

Except in very rare instances the teaching profession has not received those marks of distinction for social or national service which have been fairly abundant in recent days. This has been probably due to the fact that its vitally effective influence is silent and prolonged. Heroic deeds and patriotic self-sacrifice spring from that mould of character and sense of duty which the schools have done much to produce, and truly the teachers of our country have faithfully done their part. Is it too much, then, to expect that

due public recognition should be made to them? Honorary rewards, orders and decorations have a high and legitimate place in showing official gratitude and marking social esteem. They engender in worthy recipients emotions of sensible pride, and provoke amongst a body of combined workers feelings of selfrespect and honourable satisfaction. Happily bestowed encouragement and well placed praise are more powerful as spiritual stimuli than material rewards of whatever kind.

We must bear in mind that modern conceptions of the teacher's function are very wide indeed. It might be possible to define in a fairly accurate manner the scope of the work of the doctor or of the clergyman, but even to describe that of the teacher is an extremely difficult task. With the vision of the trained psychologist he must adapt his methods to psychical needs and possibilities; he must by direct injunction and consistent conduct instil respect for law and order and prepare his pupils for the thoughtful exercise of the duties of citizenship; he must be continuously aware that he is dealing with spiritual forces regulative of the higher life. It matters not whether the subjects taught are the simple rudimentary branches of instruction, or whether they are special or secondary; unless they have these high purposes as ultimate ends, they will not satisfy public expectation. The civic conscience has been quickened of late to the value of high ideals in education. The worker demands more than mere specialised or vocational instruction on a scientific basis. He knows the worth of intellectual tastes and moral control for

the part he means to play in state affairs, and he is alive to the fact that as a right he ought to be fashioned for the proper enjoyment of his leisure. This is a natural development of democratic ascendancy, and in order to ensure the stability of the State it must be provided for. An organised teaching profession with a critical and constructive policy can show the way, and there is manifest evidence that such an organisation is in being (vide *The Report of the Scottish Education Reform Committee, 1917*).

We have already, in general, shown how the art or craft of teaching may very conclusively claim inclusion amongst the recognised learned professions. As for the rest, it may well suffice to set forth shortly how that claim can be regularised and substantiated. Mr. Bernard Shaw tells us that the teacher has been placed "on a low level mainly because he has never shown himself to be a scientific educator but a mere soulless machine"; that he "is one whose theory of school-mastering is to accomplish by brutality what he is incapable of effecting on psychological foundations and by logical methods of work." The brutality theory is totally exploded; "there is no influence at the point of a sword or the end of a ferule." It cannot possibly be legalised nor by any philosophic process of reasoning justified. There is no modern literature in support of it, and any teacher who dared to practise it would soon be in the clutches of the law. Public opinion has long ago banned such inhumanities, and even the most irresponsible cynic seeks vainly in that direction for opportunities of scoffing. The notion that instruction even, not to mention the



growth of character and the appreciation of beauty, can be forcibly and at the same time fruitfully imparted is as obsolete as the practice of bloodletting as a panacea for obscure diseases. It is just because the art of medicine has discarded empirical methods based on dull and monotonous routine and made scientific truth fundamental in daily practice, that it is acknowledged to be a profession of incalculable benefit to the community. In like manner the same claim, for exactly similar reasons, is made and must be accepted for organised and trained teaching power.

It is entirely due to the excess and incoherence of controlling bodies that teachers are at present remunerated on no just or equitable principles. "Market value" does not apply because the sway of that salutary economic law is modified, quite naturally by differing local circumstances, but very artificially by a host of authorities, education committees, school boards, governors and directors. These bodies are constituted in so many ways—some having members elected by more or less popular vote, others by co-option, some through official position, others again by nomination of the supervising body—that it is extremely difficult to equate in terms of material reward their various inducements to service. This state of matters is, however, rapidly disappearing. As far as Scotland is concerned, national scales of salaries are to be prepared under the authority of the Education (Scotland) Act, 1918, and they will go a long way towards such highly desirable ends as the equalisation of school opportunities for the mass of the people, and increased

mobility to members of the teaching profession. These will undoubtedly originate new lines of regular promotion and create, what is of much moment to every profession, a number of high and influential offices to which exceptional ability and notably successful service may aspire. Such developments have clearly begun all over the country and warrant the prophecy that teaching is in course of attaining, if it has not attained, the rank of a calling in which a man may with satisfaction and pride begin and end his professional life.

One other public testimony may be cited to the powerful influence of teaching and its high place amongst modern social forces. It is the demand for individualism in teaching. We see this plainly evidenced in the consensus of opinion that classes in schools must be very much smaller than hitherto, that trained specialists must be engaged where aptitude is to be made use of most beneficially, and that where instruction takes an immediately practical form, it ought to be given under conditions that approximate to future realities and be aided by suitable carefully chosen equipment.

Nothing could be more wholesome or stimulating than this call for individual teaching. It makes the most of the original capacity of each pupil, and by promoting initiative in the teacher makes him resourceful and sets him free for what may fairly be called inventive work. Thus he may eventually become an alert worker in a progressive profession. Success in teaching quite as much as in any other professional calling depends greatly upon the

personality of the teacher. A good teacher makes his own method, but not in an instinctive way. He must learn from the failures and successes of others, gaining his individual experience through his trained adaptability and continual study. Hence there is a strong, a compelling, necessity that all schemes of preparation should be wisely planned and should be in the hands of those whose life's work is teaching. The corporate feeling in every profession is powerful enough to devise and require adequate standards of attainment as well as to test innate capacity. That measures for this purpose can most satisfactorily be initiated now, may with perfect confidence be asserted of the teaching profession. Teaching deals with matters where a unique form of practical skill is made dynamic by wide culture and upright conduct. Surely it is only those whose worth and eminence have been tested that are most capable of judging of entrance qualifications, of courses to be pursued, and of subsequent work and conduct as members of the profession. In no other way can a healthy professional life be encouraged and made to flourish. When once the principle of cohesion amongst the various grades of teachers has become a factor of growing efficacy, not for selfish but for national benefit, then due recognition of distinct professional standing will come. And it is evident that the working of this principle is becoming more and more manifest. There can be no consistent authority without a united profession; a body of experts whose power is conceded to it from without and does not emanate from within, is a profession only in name. The nation

must long have recognised that the great mass of the teaching profession has little power to regulate almost anything at all in connection with its work. Teachers have had to see their ranks recruited by means of a paltry, ill conceived, and unnatural system of official "maintenance allowances"; they have had often to submit to the dictation of inexperienced supervisors, and many most promising men and women, in order to reach tolerable conditions of living, have had to cast aside the spiritual sanctions of their work, and lower themselves and their calling in an unholy scramble for promotion. Happily these anomalies and indignities are quickly passing away, and public opinion now demands for the teacher, as Dr. Hayward says, "scope both for ambitions and for ideals." So long as social position is to a great extent estimated by financial reward, material considerations must have due weight. They will require no external regulation when teaching is unharassed and free, selfinspired, selfgoverned, and selfrespecting. Then only will much higher rewards than material ones be open to the willing worker, who will find in his truly spiritual occupation constant joy and solid satisfaction. After all, professional status, which is social esteem, has been well called a pledge of the teacher's competency. It is the tribute which the outside world pays to his earnestness and zeal, to his efficiency and selfsacrifice; it is simply common opinion regarding the value of his work and its worth to the community.

There is no use disguising the fact that in the past teachers have not been accorded that status in pro-

fessional life that is increasingly being granted to them now. The more intimate civic unity amongst all classes, the appreciation of what a 'rightly' educated democracy means, and a true conception of what highly trained and devoted teachers can do for the elevation of the people, are bringing this about. A sense of high national responsibility is gripping many of the teachers of our day, and that sense, once it becomes more definite and more comprehensive, will work wholly for good to the profession. This is the very antithesis to the anxiety and morbid apprehension for the future that for so many years have harassed and hindered the teacher's best work. The effects of such tendencies are noted by Rupert Brooke in one of his letters from Fiji. "I noticed in myself and in the other white people in Samoa a trait that I have remarked in schoolmasters. You know that sort of slightly irritated tolerance, and lack of *irresponsibility* that mark the pedagogue." General acceptance of the new and entirely beneficent aspect of the teacher's responsibility will bring to teachers as a united body a selfrespect and a public esteem that is far beyond all material reward.

## XI

### LOCAL ADMINISTRATION

No study of education, whether in Scotland or in any other country, and no scheme of reorganisation can be complete without some consideration of the administrative machinery. It may no doubt be argued, and with reason, that administration is only indirectly an educational issue, that it is a means, not an end, and that the product, not the machinery, is our concern. The answer is that our object is the removal of the defects of our educational system which the last half-century has revealed and the attainment of increased efficiency, and that efficiency in no small measure depends upon the agent employed. Without skilled management no system of education, however good, can be effective. On the other hand, the existence of machinery is justified only if it makes possible education of the highest type. Representing, as it does, the accretions of years of widening functions, the machinery is in danger of becoming cumbrous, obsolete, and ill adapted to new conditions and requirements. In any scheme of readjustment, therefore, the administrative machinery must be carefully overhauled. The need of this will

be further apparent when we remember that the existing machinery in Scotland is nearly fifty years old. Since its erection in 1872 it has been left without material alteration. Any repairs have been of a minor character. On the other hand, there has been laid upon it more and more work, and work ever more complicated in character and more varied in quality.

Is the machinery then adequate to perform its new functions? If not, what are its defects and what is the remedy? As every one knows, the administration of educational affairs in Scotland is in the hands of school boards. In order to form an adequate judgment of school board administration, we must for a little consider the question historically. In particular, we must ask what was the genesis of the system, what was the nature of the functions it was originally called upon to discharge, and what alterations time has wrought in these functions. The system dates from the Education Act of 1872. From 1562 to 1872 the administration, management, and control of education were largely a concern of the Church. Heritors, town councils, and others bore an important share in administration, but, even so, the Church was always in evidence, and made its influence felt throughout. By the twelfth century the parish had definitely emerged (*Book of Deer*, p. cxxxiii, *Origines Parochiales Scotiae*, vol. i. pp. xxvii-xxviii) with all its possibilities for the organisation of education, but there was no attempt at a national system till 1560-61, when a scheme, with the parish as the unit, comprehending *on paper* the whole range of

education from the elementary school to the university, was set forth in the *First Book of Discipline* (*Works of John Knox*, ed. Laing, vol. ii. pp. 209-216). Little progress was made till 1696, when the great Act of that year was passed enforcing the founding of a school in every parish (*William III. c. 26*). This Act was the legal foundation of the parochial system, and, by laying certain burdens upon the heritors, first brought the layman into direct contact with educational affairs.

By the middle of the nineteenth century it was plain that from a national point of view the parochial system had broken down. The strain of industrialism had denuded many parishes of their population and forced the people into the towns. The mineral wealth of others and the operations consequent thereon had flooded them with a large and sometimes alien population. Accordingly, in 1865, a Royal Commission under the Chairmanship of the Duke of Argyll was appointed to ascertain the facts and suggest a remedy. The Commission reported that the main defects were want of organisation and supervision, and lack of thoroughness in the teaching, and that a central authority was necessary in order to build up the whole into a national system of education (*Report of Commission*, 1867, p. 103). While the existing system gave adequate education to many and offered to not a few even from the humblest homes the possibility of obtaining the highest university instruction then available, the interests of the majority were too often sacrificed to the needs of the few, the schools, as a whole, did not rise above the level of mediocrity, and the great bulk



of the people of Scotland remained illiterate (*Report of the State of Education in the Country Districts of Scotland*, by A. C. Sellar, p. 42). The main object, therefore, of the Act of 1872 was to lay upon every parent the duty of providing at least elementary education for his children, and the machinery set up by the Act was primarily designed with a view to that end. This must be kept in mind in our examination of the school board system, and particularly of the feeblest link in that system, the small school board. The problem of those who framed the Act was how they could best supply the *lacunae* of the parochial system.

The legislature, therefore, of that time, taking the parish as the unit, transferred to popularly elected school boards the powers and duties in regard to education which had hitherto devolved upon the minister and heritors of each parish, and to-day, with the exception of the Roman Catholic and Episcopalian schools and a few higher class schools, the whole school system of Scotland is under school board administration.

It is easy in the light of subsequent developments to say that the Education (Scotland) Act, 1872, like the English Act of 1870, made a fatal mistake in retaining the smaller parish area, but it was the area lying ready to hand. The Act was useful as a transitional measure to provide for the most clamant need of the country, namely, a wide distribution of elementary education. Further, the parish school board took over the charge of the parochial school with the least possible dislocation. The legislature

felt that it was better to reconstruct than to demolish, and the next natural area, the county, was far beyond the educational vision of the times. Further, so long as the main object was to provide elementary education, it was possible to make a start even with the small parish area. At first, its inherent weakness was not apparent. The central authority, in order to secure for the country at large a minimum standard of educational attainment and efficiency, set forth its demands definitely and in minute detail. From the educational standpoint, the duties, at any rate of the small school boards, were insignificant. The bulk of their work was routine in character. Nothing throws a clearer light on the views of the legislature as to the functions of school boards in 1872, or proves more clearly that they had not grasped the need for expert guidance, than the words of the Act, providing that a board *shall* appoint a fit and proper person to be treasurer and *may* appoint a clerk. In other words, the legislature at the outset regarded the business side of educational management as the sole function of the school board; and school boards have followed the lead of the legislature so carefully that it is still the exception to appoint as chief executive officer a man of educational attainment and experience.

It soon became apparent, even to the strongest partisans of the school board system, if open to conviction and acquainted with the facts, that the smaller school boards, however well intentioned, were doomed to failure from the moment important administrative duties began to be substituted for mechanical routine. The three main developments which rendered effective

administration difficult under the system inaugurated in 1872 were: (1) the widening of the ambit of the boards' activities, especially in regard to secondary education; (2) the broadening and extending of the curricula of the schools; and (3) the gradual alteration in the relative position of the central and the local authority.

(1) With regard to the first of these we must remember that the Scottish Act of 1872, unlike the English Act of 1870, did not confine itself entirely to elementary education. It provided that the standard of education then existing in the schools of Scotland should not be lowered, and as many of the parish schools had given instruction in foreign languages, mathematics, and other higher subjects, provision was introduced for the teaching of these as "specific" subjects, for which special grants were made. This was a mere makeshift to tide the matter over until primary education was on a satisfactory footing. The instruction often consisted of mere scraps of the initial stages of wholly unrelated subjects, and in 1899 it was finally swept away, and an attempt was made to establish and co-ordinate secondary education on a more substantial basis.

But the introduction of systematic secondary education was not the only source of difficulty. The scope of the boards' activities became enlarged in other directions. As early as 1878 important duties—many of them not "educational" in the sense in which the term had been used in 1872—were imposed upon them in connection with the regulation of the employment of children; and in 1904 they were

charged with the duty of licensing children to take part in public performances in theatres, circuses, and other places of entertainment. In 1890 the blind and deaf-mute were brought within their ambit; and in 1908 they were empowered to make provision for the education, medical inspection, and conveyance to and from school of epileptic, crippled and defective children between the ages of five and sixteen within their education district, and their powers and duties were further extended under the Mental Deficiency and Lunacy (Scotland) Act, 1913. The Children Act of 1908 gave boards comprehensive powers, some of which had been foreshadowed in 1893, of dealing with the neglected and with the youthful offender, and the Education (Scotland) Act of the same year extended their duties till they included practically everything that concerned the physical, intellectual and moral wellbeing of the child. By this time all except the largest school boards were completely overwhelmed.

(2) In the second place, the gradual broadening and extending of the curriculum severely tested the capacity of school board administration, and proved the necessity for a reorganisation of the administrative machinery. It must be remembered that the curriculum is not a mere arbitrary arrangement. It develops as society develops fresh needs. Society demands, education supplies. The curriculum is an index of our educational development. Were it possible here to make a survey of the curricula of the great educational epochs beginning with the trivium and quadrivium of scholastic times, the truth of this

proposition would be absolutely manifest. For our purpose two illustrations will suffice. In the first period of church dominance in Scottish education, the curriculum included only Latin, a little music for the church services, and a very little arithmetic. Speaking generally, that meets our test. Latin was the sole language of intellectual intercourse. Power to express himself in Latin, to take part in the church services, and to perform the simple calculations of daily life, was all the educated man required. In contrast to this, the infinite variety of our needs to-day and the complexity of our environment render necessary a curriculum conceived in the spirit of that wider humanity, which had so transient a life at the Great Renaissance, that humanity which takes its culture materials from the whole field of human pursuits and human activities, which asserts that men have not only varying capacities, but also divers susceptibilities, which insists that the maximum variety of subject matter is necessary for the maximum development of the individual and of the race, and which holds that education means more than knowledge or even culture—that it means the use of that knowledge for selfdevelopment and for participation in the whole natural and spiritual environment of man. It has taken long to reach this point. The spirit of intellectual revolt for years was unable to overcome the *vis inertiae* of established custom, but to-day in the elementary schools the narrow realm of the three R's has been invaded by a troop of subjects intended to cultivate the motor elements of observation, induction, the adaptation of means to ends, and the multi-

plicity of interests in pupils; and all these have given rise to increasing complexity and difficulty of administration, and are loudly calling for the offices of the skilled administrator.

In the secondary school, the curriculum has been broadened beyond recognition, and doorways have been opened for those whose talents do not lie in the narrower humanism, for those who in the olden days wrestled with the simplest elements of Greek grammar and did not prevail, or agonised over Latin accidence *in futuram oblivionem*. In these days of vocational studies it has come to be recognised that utility and culture are not necessarily in opposition, and that secondary education should not be the monopoly of those who intend to proceed to a professional career.

(3) In the third place, the gradual alteration in the relative position of the central and the local authority created concurrently a set of circumstances entirely unlooked for in 1872. At that time, as we have seen, the Department laid down its demands definitely and in detail, in order that each part of the country should, in the first instance, reach a uniform standard of educational efficiency. When that result had been achieved, the central authority gradually divested itself of much of the detail and, while reserving the power of veto, began to lay upon the local administrative units the duty of initiating schemes of work conceived with due regard to the needs of the various districts, until gradually comparative freedom was given to each school authority to submit its own schemes of instruction. It had come to be recognised that a code which prescribed every detail was a body

without a soul, bound to prove disastrous to true education.

This fragmentary sketch is perhaps sufficient to show how much the position has changed since 1872, and how great are the difficulties with which school boards have been faced in view of fresh enactments and ever growing demands without any corresponding change in the administrative unit or any adequate supplement to existing resources. Coming to details, we find that the number of school board areas in Scotland in 1914-5—the date of the last published full *Report of the Scotch Education Department*—was 947, with populations ranging from 125 (including only 22 children of school age) to 670,361 (including 126,260 children of school age), and with income ranging from £152 to £684,975. Within these limits, 16 areas had a population of under 200; other 372 areas had fewer than 1000 inhabitants; 413 had between 1000 and 5000; 77 had between 5000 and 10,000; 59 had between 10,000 and 50,000, and only 10 had over 50,000. Of these last 10, three had over 200,000. In the same year the number of higher grade schools in Scotland was 195, and secondary education was confined to 162 school board areas, 148 of which contained only one such school each; while eight contained two each; three, three each; two, six each, and one, 10. Seventy-five of the schools gave no instruction beyond the intermediate stage. Of the remaining 120, 94 gave instruction to fewer than twenty pupils.

A makeshift attempt to introduce some form of co-ordination was made by the institution of secondary education committees. These first emerged under

Minute of the Scotch Education Department dated June 10, 1897, and their functions were widened and extended by the Act of 1908, to cover medical inspection and treatment, the supply of teachers of special subjects to the various boards within their area, etc. This was the earliest adumbration of the introduction of the county area into the sphere of educational administration.

So far we have not touched upon the Act of 1918 soon to be put in operation, as it has seemed expedient to deal, in the first place, with the position under the Acts of 1872 to 1914, which represent the range of statutory duties laid upon school boards.

We have now got before us the data necessary for a critical examination of the school board system. Has it been a success or a failure? The question does not admit of a categorical answer. From the statistics given above, it is clear that the conditions and size of area are of such variety that school boards cannot be considered in the mass. Where the area is such as to admit of the co-ordination and systematic organisation of primary, secondary, and technical education, and of the discharge of the many duties incidental to child welfare which have been imposed upon school boards by the Education (Scotland) Acts, 1872 to 1914, educational administration has often reached a high level of efficiency. Most of the areas, however, are of insufficient size, and only a few boards are selfcontained. In the majority of areas the resources are quite inadequate. Space does not permit us to consider in detail all the arguments for and against the school board system, but



it is sufficient for our purpose to deal briefly with the most important aspects of the case, so far as not already considered. For fuller details reference may be made to the debates on the Education Bills of 1905 and 1908 (*Hansard's Parliamentary Debates*, vol. 145, pp. 1148-1257, and vol. 188, pp. 76-175. Cf. also Clarke's *Short Studies in Education in Scotland*, pp. 122-144).

In the first place, the school board system rests on the foundation of direct representation and popular election. These two principles are essential if the will of the people is to be the sovereign power, but the measure of so-called popular election which was introduced by the Act of 1872 was vitiated by the principle of the cumulative vote. Devised for the purpose of securing the adequate representation of minorities—an eminently reasonable provision—it has not infrequently made possible the election of the zealot and the faddist. And this has been rendered all the easier by the amount of apathy which has been shown by the great mass of the electorate, in spite of the claim that the school board system has done so much to further local interest. No doubt local interest is a valuable factor in any administrative system and must be kept in view in any change of area, but in too many cases where there has been a burst of electioneering fervour, it has been due to some burning question not directly connected with the work of education. Accordingly, some amendment of the method is necessary, and it is to be hoped that that will be supplied by the introduction of the principle of proportional representation, which

has been made applicable to education authorities elected under the Act of 1918.

One weakness however, of the Acts of 1872 and 1908 has not been removed in the new Act—indeed, it could not be removed by an Act adopting proportional representation—that is the principle of triennial election. It is hardly open to doubt that an annual election would add greatly to the amount of interest shown in education by the electors, and would secure a continuity of policy which is impossible at present, because of the fact that all the members retire at one time. There cannot be systematic administration when an education authority, like a serial story, is not continuous, but continued. This lack of continuity of policy is most evident in the case of the small school boards; indeed some of them have had, and, in charity be it said, have been able to have, no educational policy at all. Each election as it comes round brings with it a recrudescence of irrelevance, not seldom with a distinct dash of sectarian bitterness. In the small board, now one sect returns three out of its five members, now another. New boards are often unwilling to follow out the lines adopted by their predecessors. The smallness of their revenue deprives them of expert guidance just where expert guidance is most needed. If they have a good schoolmaster and the sense to leave him alone, matters progress not so badly; but in many cases their idea of their own dignity and selfimportance is in inverse proportion to their intellectual capacity or administrative skill. In not a few of these districts, the officials do not possess, and make no claim to possess,

qualifications for an educational position, and are not themselves men of education. Where there is a local lawyer and the parish can afford to employ him, matters are somewhat better. A man of business training and some educational standing has at least been secured. But the trouble does not end with the question of competent officials. There is nothing to attract the really skilled and competent schoolmaster—neither salary nor the possibilities of promotion. In many cases, too, the boards are incompetent to judge of the qualifications of a teacher. Again and again appointments have been made according to the particular sect to which the candidates belonged, or the degree of consanguinity in which an applicant has stood to an influential member of the board. The bias is sometimes conscious, sometimes unconscious, but is rarely absent. When the balance of sectarian voting power is almost even, and the "opposition" obtains a majority at the next election, matters are often made none too pleasant for the schoolmaster, and newly elected school boards often find scope for their energies in interfering with matters with which they are ill qualified to deal. That is a poor return for the advantages to be gained by local interest and direct control. The vigilant personal attention to the affairs of the parish school, which is claimed as a merit of the school board system by certain of its partisans, often develops into vexatious meddling with the function of the teacher. Further, it does not seem necessary that large areas should entail any diminution of interest. For example, Sir William Anson in the debate on

the Bill of 1908 expressed the opinion that there had been a great increase of interest in educational matters in England after the introduction of large areas by the Act of 1902, because the Act brought into play all the educational interests of the area and created a belief in education and in public opinion.

Not only is there no continuity of policy in the majority of the small boards; they have failed also to exercise the powers of initiative granted them by successive Codes and Acts of Parliament. To appeal to the Scotch Education Department has become a habit. They ask for help and advice and then talk of bureaucratic control, forgetting that the control to which they are subjected is largely due to their own incapacity.

Another defect of the school board system has been lack of uniformity and waste of energy due to needless duplication. To have efficiency and economy there must be a reasonable measure of concentration of power and responsibility. Again and again when the Bills of 1904 and 1905 were before Parliament, it was argued by the partisans of the school board system that it is economical and that the adoption of larger areas would lead to extravagance of management without corresponding benefit. In reply to that argument, one would press for a definition of economy, and argue that the system which spends least is not necessarily the most economical. In education, the question of economy is determined by the quality of the product, not by the quantity—not by the price but by the efficiency. Without labouring that argument, let us look at the facts as they are

to-day. At the present moment there is enormous administrative waste owing to the existence of so many small school boards. Each board has a complete set of officers, a separate organisation and separate machinery. Not only so, but such machinery involves corresponding additional machinery at the centre to deal with the correspondence from the 947 areas into which Scotland has unfortunately for so long been divided.

Another argument is that with large areas the power would pass from the members of the authority into the hands of officials. The answer to that is that if the alternative is between education administered by small local bodies, many of whose members have little knowledge of education or of educational administration, and education administered by officials who at least have expert knowledge of the subject, there are few reasonable men who would have any difficulty in choosing the latter alternative.\* But it is by no means a necessary result. If in the enlarged education areas the rate-payers do not elect as their representatives men who are capable of controlling the officials, the fault lies with the electorate. There does not appear to be much danger here, for the large authorities will attract to their membership men and women of educational and social standing and a knowledge of business methods, who by their training and experience will be well fitted to exercise over the official the control of which he is supposed to stand so much in need.

It now remains to indicate briefly the changes in the administrative machinery which are necessary in

order to remove existing defects and to bring our educational system into line with modern requirements. The present is an appropriate time for such an attempt. By the Act of 1918 an effort has at last been made to establish a national system of education up to the universities, and to devise the machinery necessary for the progressive development and comprehensive organisation of national education, primary, secondary, and technical.

The first question for the legislature was: "What area should be adopted in order to secure the maximum of educational and administrative efficiency?" Since the beginning of the century it has been clear to all except the blind partisans of the school board system that the people of Scotland, however reluctantly, must part with the parish area, or there must be a severance between primary and secondary education. In the abortive Bills of 1904 and 1905 attempts were made to enlarge the administrative area, but the opponents of administrative progress proved too strong. In the Bill of 1908 the legislature chose the lesser of two evils; it got what it could of educational benefit for Scotland and left the area untouched.

The question of the most suitable area to supersede the parish has been the subject of much debate, and has been discussed *ad nauseam* during the current year. Fortunately, as we think, the Government pursued a firm and consistent policy throughout. Mr. Munro adopted at the outset the county area, and at every stage of the discussion made it abundantly clear that by this area the Bill must

stand or fall.' The county may not be in all respects an ideal area, but the remedy is a redistribution of counties *quoad omnia*, and not the additional confusion and inconvenience of another set of overlapping areas. The aim of present day legislation is simplification and co-ordination. Further, there is an historical precedent. In 1872 the legislature took the existing area, the parish, which in its view was then adequate to meet the most clamant need, that of primary education. To-day, when the aim is to co-ordinate all aspects of education in a national system, it has taken the next in size of the existing areas, that of the county, which already through the secondary education committee is playing an important part in educational administration. It has been urged that the county area is in many cases too large. One would venture to prophesy that such administrative difficulties as arise will be encountered in the small county, not in the large. Experience warrants the belief that as the area increases in size, the efficiency will increase up to the point when it is no longer possible to have local interest and an adequate measure of local control. And it must be remembered that the whole system of locomotion in country districts is being revolutionised by the extension of motor traction, so that the word "local" will henceforth have a new significance. The close of the present decade may see the aeroplane established as a rapid and popular means of transport to meetings of the education authority or even to secondary schools!

The debate as to the relative merits of an

education committee nominated by the county council, with additional co-opted members, and an authority specially elected for the purpose of education, *i.e. ad hoc*, is now ancient history. Much may be said on either side, which cannot here be recalled. After all, the crucial question is the area, and the *ad hoc* principle has at least one advantage - all the members of the authority are popularly elected. The principle of co-option is extended only to the local school management committees to be appointed under the Act to perform certain of the less important duties of the education authority, which can be most competently undertaken by efficient and representative district bodies, leaving the authority proper with sufficient leisure to deal with the problem of co-ordinating the education of the whole area. These committees also will form an important link between the education authority and the various parts of their district, will keep the authority in close touch with the educational needs of the various localities, and will do much to confirm and strengthen local interest. The idea of school management committees is not new. School boards got the power to appoint them under the Act of 1872, but under the Act of 1918 their appointment is made compulsory. It is to be hoped that they will be such as to command the confidence of the district and that they will adequately represent its various interests.

The new machinery of Scottish education is in position, ready to start. Like all new machinery, it will no doubt creak at first, but its component parts are well constructed, and once the rough edges have



worn off, it should work satisfactorily. The *ad hoc* principle is on its trial: progress in Scotland under it will be narrowly watched and compared with that of England under the rival system. In the latter, the principle of enlarged areas was adopted in 1902, and has not been disturbed by the Act of 1918. The former Act established four sets of educational areas—administrative counties, county boroughs of 50,000 inhabitants and upwards, non-county boroughs of 10,000 and upwards, and urban districts of over 20,000 inhabitants. The counties and county boroughs have the administration of all forms of education; the other two sets of authorities deal with elementary education only. In this respect the English system is distinctly inferior to the Scottish system, under which each authority has control of all aspects of education within its area.

The English education committees usually consist to the extent of two-thirds of their number of council members and to the extent of one-third of persons of experience in education. In counties it is obligatory, and in other cases it is permissible, for the local authority to appoint managers for any school provided by them, and managers must be appointed for all voluntary schools—or “non-provided” schools, as they are called—within their area.

There has been marked progress in England since the enlargement of the education area, and not a little of that progress has been due to the foresight of the education authorities in appointing as their chief executive officers, or “Directors of Education,”

as they are commonly called, men of the highest educational attainment and administrative experience. Without such men it would have been impossible to reduce to order the chaotic and unrelated elements of English education, and to remove the evils that were crying aloud for remedy in 1902.

So far we have not touched on one of the most important functions of the education authority, that of finding the money necessary to put into operation the progressive and comprehensive schemes of education which it is their duty to devise. One often hears it suggested that, as education is a national concern, the whole cost should be met from imperial sources. That would be fatal to educational progress. The result would be that the central authority would be disinclined to give adequate local control, the local authority would become the mere agent disburser of the Secretary for Scotland and his "phantom colleagues," and it would ultimately be impossible to secure the services of competent and well informed members. Further, it must be remembered that education, while a state affair, is also a local affair, and consequently a proportion of the cost should be met from the local rates. The only sound basis is that a definite *percentage* should be provided by the imperial exchequer. Then if new duties are imposed upon the local authority, Parliament has to contribute its due share, and the ratio between imperial and local contribution remains constant. At the present moment the government grants are distributed largely on the basis of average attendance. But the school fabric has to be

maintained, and there must be adequate staff and equipment whether the average attendance is high or low. Further, if, by epidemic or otherwise, the attendance is reduced, the burden of school work is increased, not diminished.

The next question is: "To what extent should the burden be borne by each of the contributing parties?" The following figures may afford us some guidance. In 1914-5, 4.12 per cent of the expenditure, including the cost of enforcing attendance, was incurred in administration, 14.5 per cent in providing school accommodation, and 78.44 per cent in instructing the children—exclusive of the voluntary schools. The cost of the fabric, the administration, and whatever else is more strictly local, should certainly be met from the rates. That may be reasonably put at 25 per cent, and the remaining 75 per cent should be derived from imperial sources. The Treasury would no doubt regard such a proposal with disfavour, but it is in the interests of education that the local contribution should be low and the imperial high, for, as has been said by Lord Crewe, "the Englishman pays his taxes in sorrow, but his rates in anger." That is not confined to England, and the possibilities of reform in education should not depend upon the willingness of "separate local authorities to enrage the ratepayer simultaneously, but upon the readiness which the nation as a whole does display to shoulder its liabilities."

That completes so far the survey of the educational machinery as we have known it, but it may not be out of place to offer a few suggestions as to how best the

objects for which it is being refashioned may be secured. Be it said at the outset that under the new conditions there cannot be effective administration without expert professional guidance. The new authorities have got great powers of initiative. The central authority now fully recognises that its business is not to supplant local initiative and control, but to develop, strengthen, and, where necessary, supplement. No doubt it must fix the minimum standard of excellence and efficiency, and take vigorous steps to secure that these are attained, but local authorities must be left free to work out the details in accordance with the requirements of their respective areas. The school is not an alien thing grafted on the life of the community. It will flourish most, and the administration will be the best where there is the fullest response to local needs. To that end, therefore, the machinery of administration must keep in close touch with the life of the schools, and it is only an administrator having actual knowledge of the child and of the child's needs who can be trusted successfully to solve the problems of educational administration. Local authorities are no longer responsible merely for the work of the schools under their direct control, but must make a complete survey of all the educational agencies within their areas and see that these are properly co-ordinated. They must formulate schemes of instruction for the child and for the adolescent. They must grade their schools and balance their curricula to meet all local needs. They must ensure that the year which has been added to the compulsory school age is profitably employed,

that adolescent education in the continuation school fulfils its purpose, and that those who proceed to an industrial or a commercial career take with them some of the elements of culture and some of its resources for hours of leisure.

• Education authorities must remember that their prime function is to determine how the general efficiency of education is to be increased. While bound, therefore, to insist upon that economy which is becoming, in the expenditure of public funds, and to put forward their proposals with due regard to the material resources of the community, they must also keep before them and before the public the fact that the staffs of the schools are rendering the highest professional service to the State, and that it is their right to have the income pertaining to professional service. It is a poor shortsighted policy to starve the schools, particularly to-day when the increasingly complex character of educational institutions calls for that skill and training which in the commercial world would ensure the receipt of remuneration far in excess of that ordinarily given for educational work. The most careful consideration must also be given to the appointment and promotion of teachers. Means must be evolved whereby their merits shall be ascertained and their capacity assessed. Promotion must not depend on the hasty judgment of this or that member of the authority or the mere unreasoned opinion of a permanent official, however skilful he may be.

• Further, the administrator must work hand in hand with the teacher. There cannot be real

efficiency without mutual help. The teacher must not assume that every administrative proposal is an attack or a slur upon his capacity. The administrator must never forget that it is in the schoolroom that the proposals have to be tried, and that if they are found wanting, it is the teacher's duty to say so in order that a remedy may be found. Freedom is not incompatible with administrative direction. The value of such direction is great when it proceeds from a competent source; and the skilled administrator, sitting at the centre of things, has the advantage of passing in judicial review the various proposals made by the individual schools and securing that the good points in each are brought under the notice of all. Cleavage of interest is fatal. The teacher's help must be asked and taken. The new Act recognises that, and provides that there shall be at least one teacher on each school management committee. That is quite insufficient for the purpose now referred to. Not one teacher, but all the teachers in an area must be impressed into the service. There should be united consideration by teacher and administrator of every educational proposal put forward. Its points found weak on trial should form the basis of further discussion. Mere destructive criticism is not sufficient on either side. It is an easy thing to criticise. As Johnson once said, "Criticism is a study by which men grow important and formidable at a very small expense." Criticism is valuable only in so far as it leads to a policy of construction and of united effort. The administrative authority, the teachers, and the executive officers must appreciate each other's stand-

point. The whole range of educational ability and possibility is not the monopoly of any one of them.

Another duty of the administrative authority is to secure a free intercourse of ideas between teacher and teacher, school and school. Encouragement should be given to the free use of well adapted experiments in teaching and organisation. These should be tried in the first instance by the man who suggests them, and thereafter discussed with the general body of teachers, tested further in schools of various types, and, if found to be of universal application, adopted in all the schools in the administrative area. Moreover, the administrative authority should see that the teachers in each type of school are kept in touch with what is done in other types. For example, the teacher of an ordinary class, who is most frequently the first to call attention to backward or defective children, should have some idea of what is done in the schools for the mentally defective. The administrative authority must see that the most is made of the services of their headmasters. It is one of the subtleties of our national humour that the greater a man's maturity and experience in teaching, the less teaching can he undertake. The headmaster in many a school is reduced to the level of a mere clerk. His time is spent filling up this or that useless return, and attending to the hundred and one trivialities which try the soul of the teacher. It is to be hoped that under the new system, where grants are no longer given for this subject or for that, much of this will be swept away, for untying useless red tape, like teasing oakum, is the badge of penal servitude.

We have spoken of the need of expert guidance. It is clear that the chief executive officer should be first and foremost an educationist, capable of giving advice on educational issues and policy, a Director or Adviser acting subject to the control of the authority, and a man who has made a professional and scientific study of education. For the purpose of dealing with administrative detail, the office staff should be organised into departments corresponding with the main divisions of educational work. At the head of each of these departments there should be an official responsible for the details of his department, and there should be on the staff of every authority at least one official (preferably a man with a legal training) responsible to the executive officer, and having general oversight of the financial and clerical work and the whole administrative routine. But whatever be the method of devolution followed, the executive officer must take full responsibility. In questions of education, as elsewhere, irresponsibility spells disaster. With regard to the relative positions of the authority and of the expert adviser, it has been said that the administrator should have "large powers of initiative, recommendation, and action," while to the education authority should be assigned "large powers of inspiration, veto, and suggestion," and the responsibility of "final control and approval" (*Educational Administration in U.S.A.*, Dutton and Snedden, pp. 106 ff.).

Scotland, beginning as it does *de novo* the system established by the recent Act, has at the moment an opportunity to put the work of educational administra-



tion on a basis such as it has never had before, and it is to be hoped that nothing but the desire to do what is best in the interests of educational efficiency will actuate the members of the various authorities in the selection of their chief executive officers. These officials must, as already indicated, be men of professional attainment, of a university standard of education, versed in, and with practical experience of, the various aspects of educational work. It is all the easier to adopt such a course in the making of appointments, because the great majority of the officials who are at present working under the school board system are part-time officials, and their services can be well utilised in carrying out the administrative work that is delegated to the various school management committees.

The official appointed must be big enough to comprehend his problem in all its major aspects, always remembering that his final goal is increased educational efficiency. There has been a great enlargement of educational effort during the last few years. Education is in process of rapid evolution. Its conception is no longer limited to the period of childhood. Provision is now made to meet the demand for the education of the adolescent. New subjects are being introduced into the schools. We are readjusting our educational perspective. The years which lie before us will witness still greater developments. Indeed "there is but one limit to what education may accomplish for the future of civilisation in this critical period; that limit is the vision and faith of our educational leaders"

## XII

### THE SCOTTISH UNIVERSITIES

Two great universities owe their existence to the heroic spirit of resistance, and not only of resistance but of reaching forward to a new and better state of things, which may in a great people, as in great individuals, be the fruit of conflict and suffering, the only adequate compensation for the immeasurable loss which a prolonged and murderous war inflicts upon humanity and civilisation. When the terrible siege of Leyden was over, the Prince of Orange, the nobles, and the towns of the United Provinces, "in recognition of the endurance of the Leydeners, offered them exemption from taxes for a certain number of years, or the institution there of a University, whichever best pleased them. And they, considering that freedom from public burdens is often limited by necessity or even annulled, in any case cannot last for ever, made the nobler their choice; which was confirmed to them on the 8th of the following February, and adequately endowed, so that it has flourished to the present day alike in the numbers of its native and foreign students, and in the celebrity of its learned leaders and other worthy persons drawn

thither through love of letters or installed as public reward" (Hooft, *Nederlandsche Historien*). Such was the origin of the most celebrated university in Europe of the seventeenth century; and that of the most famous of the nineteenth century was similar. It was in the hour of defeat and humiliation, when the whole political organisation of Prussia had collapsed, that the University of Berlin was conceived and brought to birth—"the most individual achievement of Wilhelm von Humboldt. Established under the most depressing political conditions, but—considering the prevailing poverty—munificently equipped, it had been intended from the first to become a centre of German science and learning—an imperishable monument of the strength and self-reliance which enabled the prostrate state to rise again, and at the same time of the spirit in which this elevation was effected. The king himself had once defined that spirit by saying that the Prussian state would have to make up for its loss in physical by intellectual forces. From the beginning the new University was the meeting-place of the best intellectual forces of the time, Schleiermacher and Fichte being among its spiritual founders. Its character was determined, above all, by the cultivation of classical studies and of speculative philosophy" (Paulsen, *German Education Past and Present*).

The Scottish universities are modest matrons beside such great institutions as Leyden and Berlin; but in their day and hour they have been, despite all their faults and limitations, the *almae matres* of a people whose service to the world in character and

intellect has been altogether out of proportion to its wealth and numbers. Their very number prevented their ever becoming quite such *foci* of intellectual life as Oxford and Cambridge were for the upper and wealthier classes of England, or Trinity College, Dublin, for the ascendant Protestant minority of Ireland. They never had anything corresponding to the fellowships of these institutions, creating a body of, potential at any rate, postgraduate workers and scholars, offering direct and immediate encouragement to the pursuit of higher scholarship, and providing the guidance and instruction necessary for such continued study. Their work ended with their annual output of graduates in arts, medicine, law, and theology. The graduate who desired to prolong his non-professional studies—in classics, mathematics, philosophy, or natural science—had to do so elsewhere, on the Continent or in the “arenas of the south,” as Sir William Geddes called Oxford and Cambridge. Yet, despite these serious shortcomings as national universities, the Scottish universities enjoyed, as a result of their comparatively well paid chairs, and still more of the leisure afforded by the old arrangement of the terms, the services of professors in theology, in philosophy, in mathematics, in physics, in natural science, in economics, to a less yet to a real extent in classics, in literature including rhetoric and literary history, whose original contributions to their subjects were recognised as of the highest value. As teachers, though they had often to do the work of schoolmasters rather than university professors, they profoundly affected the minds of

their best students, students drawn from every class in the country, setting in movement through the country, by means of the clergy, the teachers, the doctors, and the lawyers whom they educated, waves of intellectual activity to which the intensified spiritual life of the Scottish people is in no small measure to be traced.

During the last twenty-five years these universities have been passing through a difficult and even painful period of transition. The institution of a school leaving certificate and a university preliminary examination, the standard of both of which was at first set far too high, altered at a stroke the relation in which they stood to the schools, and the part which they played in the general education of the country. From an average of sixteen to seventeen, the age of the entrance was abruptly raised to nineteen and over, with the natural consequence of a great decrease in the number of men students, the effects of which were to some extent disguised by the admission of women. The uniform course of study for the degree of M.A.—a curriculum which included all the chief factors in a liberal education, so that John Stuart Mill could say, “to comment upon the course of education at the Scottish Universities is to pass in review every essential department of general culture”—that course was broken in pieces, and with it was destroyed what had been the great factor in the intellectual life of the universities, the single class, in which pass and honours candidates were all united, with all which that meant in the way of mutual intercourse and emulation.

The professorships have been deprived of those advantages of salary and leisure—opportunities which like other opportunities might be abused— which retained in or drew to Scotland men whose capacity and learning were greatly out of proportion to the actual teaching they had to provide—Kelvin, Jellie, Clerk Maxwell, Bain, Butcher, Caird, to mention only a few—and this at the time when new competitors had entered the field in the provincial universities of England. A Scottish chair is no longer the temptation which it once was to a Fellow of Oxford or Cambridge, a professor of London, or Liverpool, or Manchester. It is not greatly to be wondered at that the lines on which the universities have moved during these years have been uncertain and obscure, and that the question has been painfully present to many minds, What is the exact function that the universities are discharging in the education and life of Scotland. They no longer put the coping stone upon the general liberal education of the best youth of the country, adding to what they have already acquired at school of linguistic, literary, historical, and scientific knowledge, and completing the cycle by introducing them to the study of philosophical methods and speculation. At the same time they are not yet producing in all branches of study a sufficient number of young scholars who have got most of what mere teaching can do for them, who having specialised at the university have acquired what is the main end of specialised study at this stage, an understanding grasp of scientific method—using scientific in the widest sense, so as to include

"the studies in all the faculties and not in that of science alone" (Mark Pattison, *Suggestions on Academical Organisation*, 1868, and compare Burnet, *Higher Education and the War*, p. 78, on the German word "Wissenschaftlich")—and are ready to become either teachers or investigators themselves, or, after further professional training, to form the *élite* of the government service, the liberal professions, and, it is to be hoped, of the industrial and commercial world. A university is not fully itself till it can educate its own teachers. The Scottish universities are not yet doing that in sufficient measure, except in science. Higher studies in all the subjects which are proper to the faculty of arts have to be continued elsewhere by those for whom the Carnegie and other scholarships provide the means. This is how things stood before the War, a war which has fallen nowhere more heavily than on Scotland and the Scottish universities. Our men students have been swept from the benches, many of them never to return. The best of our young graduates, the men to whose future career their teachers looked forward with unbounded confidence, both for themselves and for the universities they seemed destined to serve, are dead in France or Gallipoli or Mesopotamia. What are we to do to make good our losses, to make up by intellectual for loss in physical forces, to carry the universities over the gap in which they have been struggling for a quarter of a century, to recover what may be recovered of the loss entailed when the universities ceased to provide the last stage in a good general education, and above all to make our univer-

sities, in all the more important branches of study they profess, complete in themselves, able to afford a young Scotchman or Scotchwoman all the training that is requisite to become an independent scholar and researcher? It is well that our graduates should visit other universities, but not as undergraduates, to complete what they might have obtained at home. If they go, it should be to carry on some investigation already begun, and the final credit and benefit of their work should accrue to their native universities.

In the practical consideration of the question, nothing is to be gained by attempting to start entirely *de novo*, and little will be gained by taking as our models institutions whose history is so distinct and different from our own as the English universities of Oxford and Cambridge. The work of the Commission of 1889 suffered from nothing so much as from the fact that the dominating influence in it was that of men who were not deeply imbued with the spirit of the Scottish universities, and had no adequate faith in their capacity for development on the lines of the past. So strongly does the present writer feel the truth of this, that he proposes to consider the question chiefly in the light of his own experience as a student and teacher, while endeavouring to bring to the interpretation and elucidation of the suggestions which this experience has inspired, what has been said and written on the subject by others. He spent four years as a student at the University of Aberdeen and four at Oxford. One semester at Leipzig gave him confessedly slight experience of the spirit and method of the German university, which has been supplied



mented by the experience of his own students who studied there more systematically, as well as by reading. For twenty-one years he has taught at one Scottish university, and for three at another, and has been brought into constant touch with the other two, as an honorary graduate of St. Andrews, and enjoying more intimate friendship with some of the professors at Glasgow than at any other of the four. He has also been an examiner in the University of Leeds.

What then is the impression that remains in the mind most distinctly from a Scottish university course as that existed before 1892, when the new ordinances of the 1889 Commission came into force? The subjects of the first year—Latin and Greek, English, mathematics and physics—were those already begun at school, and the teaching of some of them, *e.g.* the classics, was not very different in method from that which had prevailed at school, though as a rule, and more especially in the mathematical classes, there was the feeling of being carried along more rapidly and of seeing better the connections and development of the subject. The newest and most awakening experiences came from the English class as taught by Professor Minto, physics of which most of us had learned little or nothing, and especially philosophy, *i.e.* logic and psychology, for moral philosophy, as taught at Aberdeen at the time, counted for nothing. At Glasgow under Caird it was perhaps the most important class in the curriculum.

But the deepest impression is not of the subjects taught but of the new spirit in which we worked. We

were seventeen or younger when we entered, but at once we felt ourselves men. We were no longer boys being questioned and examined on each day's prescribed task, except in the Latin and Greek classes. We were students following a leader who stepped on before us. Much has been said against the lecture system as it survived and still survives in Scotland, as unnecessary with the increase of books, as inferior to tutorial exercises. From my own experience I would venture to maintain that there is at a certain stage something wonderfully awakening in being called on to follow a well conducted course of lectures in mathematics or physics, literary history or philosophy, or on any scientific or historical subject by one who is a master of his subject; and that nothing can well compare with it as an introduction, supplemented, as it ought to be, by reading and tutorial instruction. The evil of the Scottish system lay not in the lectures themselves but in the examinations which followed the lectures too closely, partly from a natural human weakness, partly from the inability of most of the students to obtain an adequate supply of books. Many were too poor to buy them, and shrank even from the deposit required for the use of the library. The opening of the university library without charge, the institution of public libraries, and the multiplication of class libraries have done much to obviate this difficulty, though it is still a difficulty which a Scottish teacher has to reckon with.

But greater than the influence of the teachers was that of the class itself. There is nothing anywhere—not even perhaps in America, where the system of

options as now in Scotland prevails and where there is no honours degree—quite like a Scottish University class as it then was. It was a heterogeneous but united body from first to last. One entered and, allowing for a certain amount of wear and tear, one left college with the same body of students. But that united body included students of all degrees of excellence and variety of capacity, from the candidates for honours in all the subjects in which honours could be taken—classics, mathematics, philosophy, and science—to the humblest aspirant to a pass degree. The fact that one was a candidate for honours did not separate him from the class. The work was something additional, done entirely by private reading—there were no honours classes in philosophy at Aberdeen in my time—or with the assistance of optional honours classes instituted by some of the professors, *e.g.* in classics and physics, or in extra-mural classes conducted by what might be called crammers. This was notably the case in mathematics in Aberdeen, where the private classes, for pass and honours candidates, conducted by Dr. David Rennet, were a factor in University education that no Aberdeen graduate of these years will ever forget. Otherwise, a candidate for honours took all the subjects required for the pass degree, and he took them in the same classes as the rest of his year. The result for the professor was that he had a class to lecture to, which did not on the one hand consist—as in Oxford and Cambridge—solely of candidates for honours in his special subject, nor on the other merely of passmen to whose capacity he had to adapt his

treatment of the subject. The class was one which included, along with passmen of very various degrees of attainment, the *élite* of the year of every kind of ability—classical, mathematical, philosophical, and scientific. In none of these subjects were the attainments probably yet high, but the capacity was there; and a professor who passed from Aberdeen to Cambridge has confessed to me that there was nothing he missed so much as the opportunity of thus addressing an audience which included such a range of ability and interest, of lecturing on his own subject to the best of those who were to be candidates for distinction in various fields. The effect for the students was an enormous volume of eager and generous emulation. The mathematical student contended for a good place in the Latin and Greek class; the classical student for a good place in mathematics and physics; both for distinction in philosophy or literature. Such a system was, one may suppose, simply an extension of the school, and so it was, but under the new conditions of over increasing freedom, selfdetermination, and responsibility. It has been stated to me by an American professor that in the similar class system which prevails there, with a larger number of well-to-do students than in Aberdeen—where at the time spoken of there were none—a certain public opinion is diffused through the class that the work is not to be taken too seriously. No such temper prevailed in Aberdeen, though some individuals strove, and strove wisely, for an extension of the range of interest, for some attention to sport and a wider range of reading than

the system cramped. The atmosphere was one of work and competition. The best students scorned delights and lived laborious days. There were defects in the system and the spirit which it engendered. Some good students drew apart from their fellows and became prize and distinction hunters. Our intercourse had not the charm and grace, the freedom of mind and wide range of cultured interests, the critical spirit that one found in intellectual circles at Oxford. But no one who remembers it in tranquillity but must feel he owes a deep debt to the spirit of arduous and generous emulation which breathed from these lads carving out their own careers on the rudely cut and hacked benches of King's College; and the same temper prevailed, strengthened by the clearer perception of the end in view, in the medical classes at Marischal College, though there was perhaps a larger fringe of idlers and of young men cultivating the social amenities of life.

It must not be forgotten, too, that the class system was already from 1860 onwards in process of modification by the growth of the system of honours, the increase in the numbers of candidates for honours in classics, mathematics, philosophy, and science. The better student sought distinction or at least a creditable place in all his classes, but he did not overestimate the importance of the class place. He knew that ultimately his reputation and his future would depend on the honours he gained in graduating, and that for that he must read and work by himself as well as attend lectures. A bridge was

being formed between the general culture of the degree curriculum and the specialisation which is the distinctive aim and end of university training, but not to be begun till the right time. To carry that specialisation further in classics and mathematics there were the "arenas of the south," and the help of the Ferguson and other scholarships. An occasional student of philosophy made his way, like Lord Haldane (an Edinburgh student), to Germany. A graduate with honours in science might also go south, like Dr. Chalmers Mitchell, or perhaps abroad. The majority of Science-graduates, I think, went on to medicine.

Such was the Scottish university education of thirty to forty years ago, an education which gave to the best of our young men, or a large proportion of them, a good general knowledge of "every essential department of general culture." Mill and Whately have discriminated between a general knowledge and a superficial knowledge. "To have a general knowledge of a subject is to know only its leading truths, but to know these not superficially but thoroughly so as to have a true conception of the subject in its great features; leaving the minor details to those who require them for the purposes of their special pursuit." Moreover, in the honours studies, a beginning had been made in the more specialised and advanced study of certain subjects—classics, mathematics and physics, philosophy, science—combined with this general training, and, according to the same authority, it is this combination which constitutes a truly liberal education ' which gives an enlightened public, a body of culti-

vated intellects, each taught by its attainments in its own province what real knowledge is, and knowing enough of other subjects to be able to discern who are those that know them better." There were serious defects and shortcomings in the system. Too much in each department depended on the individual professor, his competence and conscientiousness. There were, though Mill was not convinced of this, important omissions in the curriculum—no history, no economics, no modern languages, very little natural science or English literature. There was no well organised social intercourse such as a college at Oxford or Cambridge provides, though the societies, debating, literary, scientific, were a vital element in our life and development. The physical side of education was neglected, and there were frequent tragedies due to neglect of sleep and food and exercise. The loneliness of life in lodgings was acutely felt by many and the perils of such a life are obvious.

These were some of the defects which the Commission of 1889 set itself to remedy, and it did so, unfortunately, without following the guidance of any clear principle, not proceeding gradually and letting the universities feel their way, especially in the matter of "options," but by a set of abrupt and revolutionary changes, with disastrous results for the pass degree, only to some extent compensated for by the improved facilities for honours work. Had the members of that Commission shared Mill's and Whately's comprehension of what a good general knowledge implies, and the former's generous but not necessarily extravagant estimate of the capacity of

the human mind, they might have done much without disintegrating the old system. If the entrance examination had been made of a general character, with no too rigid exaction of a definite standard in individual subjects, so as to raise the age by a year, from between sixteen and seventeen to about eighteen, and thus to release most of the students from one year in school subjects still continued, as classics and mathematics, it would have been possible, even easy to add to the course as it stood a year of history and of English literature while making provision for summer courses in modern languages, natural sciences, economics, and perhaps other subjects. As these established themselves, the principle of options might have been allowed in respect to languages and sciences while preserving as a nucleus those distinctively university subjects—in the sense that they are either not taught at school at all or taught in a different way and on a much lower level—philosophy, history, and English literature. At the same time, the honours student could have been relieved of subjects which he had already studied sufficiently at school and which found no place in his honours department, while he, too, should have been compelled to complete his general education by taking those subjects outside his department which are not school subjects—philosophy, history, or English literature. In this way the old curriculum, in so far as it represented “every essential department of general culture,” would have been preserved but expanded, with some freedom of choice as to the representatives of such departments as



languages and science. We should have escaped one of the worst results of the present arrangement, the imperfectly educated honours graduate, the second or third-class honours graduate who has left incomplete his general education in order to specialise without distinction.

This was not done, and in the prevailing mood of the moment it was probably impracticable. It is such a development as the universities might of themselves have inaugurated, had there existed among the professoriate a spirit of conservative reform. But the Scottish universities have suffered much from the concurrence of two trends of mind, impatient, ill-informed discontent without, entire complacency within. What was done was to attempt an illogical concession to the vague cry for "options" and "specialisation" in a scheme of partly settled alternatives, partly free selection. Some ten years ago this scheme was modified by a new ordinance, the excellent intention of which was to secure a course of more specialised study in each curriculum—two subjects out of five to be studied for at least two years—but the intention was in the main defeated by the inertia of those professors who were unwilling to institute adequate second courses, and by a meaningless and unprincipled use of the term "cognate subjects." The final result was a more complete disintegration of the curriculum; the degree came more, than ever to represent the study for a single year—sometimes not even that—of seven disconnected subjects. A superficial knowledge of seven subjects took the place of a "good general

knowledge" of classics, mathematics and physics, and philosophy, with an introduction to English and natural science. As regards the pass degree, the last twenty-five years have thus witnessed a steady diminution of interest in the work for such a degree on the part of student and professor, a steady fall in its value as an introduction to, and preparation for, vocational and professional study, or as a guarantee of fitness for teaching or other posts. The interest of the professor has centred more and more in the group of honours students who work with him throughout their course.

The question, accordingly, with which one is brought face to face to-day when we are called upon to consider with a new seriousness the future of Scottish education, is whether the universities should continue to grant a pass degree of M.A. at all. Mark Pattison desired to abolish the pass degree at Oxford in 1868. The late Professor Chrystal believed that the abolition of the pass degree would make for a purer pursuit of knowledge for its own sake. Neither of these, in abolishing the pass degree, wished to eliminate the pass student, the student who is not a candidate for honours, but simply the student who comes "to obtain the degree apart from the education." What they seem to have anticipated was the use of our ordinary classes by a number of those whose parents wished them to continue liberal studies for a few years after leaving school, choosing freely the subjects they wished to study for the sake of knowledge, not for the sake of a degree. Mark Pattison may also have contemplated the use of

such classes by those who, having already begun their professional and industrial training, awake of themselves to a desire for further knowledge of subjects outside the professional, and not included in a school, curriculum. Professor Burnet, writing from the point of view of one who believes that the universities exist to produce an intellectual *élite*—the *élite* from which are to come both the leaders in our learned professions and civil service, and the smaller *élite* of original researchers and *doctores*—seems to approach the same conclusion, as he would make the pass degree standard “a little lower than that of the present Honours degree, but a good deal higher than the present Pass.” He would abolish honours, but make the pass of an honours standard. The present writer is inclined to think that, to substitute that illusion, a pass standard, for the honours degree, the examination for which is, like the French *Aggregation*, of a competitive nature, would be a retrogressive step.

In order to answer the question, it is necessary to try to determine what was in fact, under the old system, and what is still in part the motive of a student in seeking to obtain a pass degree as that degree was and is. The idea of course was that he was completing his general education before entering on a professional or vocational training. “Universities,” says John Stuart Mill, “are not intended to teach the knowledge required to fit men for some special mode of gaining their livelihood. Their object is not to make skilful lawyers, or physicians, or engineers, but capable and cultivated human

beings." This is Professor Burnet's ideal of a humanistic education, preceding the vocational, as that was developed by the Greeks and revived at the Renaissance (*Higher Education and the War*, chap. i.), an education which aimed at developing faculty and bringing out the excellence of man as man. It was admirably fulfilled in the education of the honours graduate under the old regulations, who combined specialised study in some one department with a "good general education" as defined above.

But as a fact the number of students who took the degree, pass or honours, in this spirit was always a minority. A certain number of our graduates did proceed to professional study in medicine and law; a few passed into business and other careers, as journalism. For the majority the curriculum was also a professional or vocational one. They were going to be teachers and were studying the subjects they were afterwards to teach. It is the fall in the value of a pass degree as a recognised qualification for the teaching profession in Scotland that has done most to discredit it with students. In narrowing the work of the honours student to his special field, with one or two other subjects thrown in in a casual way, the intention of the 1889 Commission was not to improve his liberal education, as Mill and Professor Burnet describe that, but to make him more proficient in a study which, in the majority of cases, he intended to use in his subsequent career. These are the facts, and it is well to recognise them, for they raise some questions of the highest importance.

Is it likely that any large number of our young

Scotchmen will be able to continue a purely general education till anything like the present age of an honours graduate? Professor Burnet seems to doubt this, and fixes the upper limit at "twenty at least." It is not in Scotland, but even in wealthier England, among the parents of those who send their sons to Oxford or Cambridge, that the question had, even before the War, been growing insistent, whether they were justified in postponing a professional training till so late; and the economic conditions after the War are not likely to make the position easier. Those who are fully justified in devoting themselves to such a prolonged course of humanistic study are, first, those belonging to that section of society which has no need to work, "men whose function is to use worthily the blessings of fortune rather than to struggle for their attainment" (Moschen, *Rectorial Address at Aberdeen*, 1888); second, the small class who may expect to become the *élite* of some of the learned professions (such as the bar), or of the civil service; and, lastly, those whose profession is to be learning, our future researchers and university teachers.

But is it certain that a liberal or humanist and a professional or vocational training are so opposed as to be mutually exclusive? The conception of a humanistic education, an education which aimed at cultivating a man's excellence as such, we owe, Professor Burnet tells us, to Greece, and it was revived at the Renaissance; but Greek thought would hardly allow the name of man to the merchant or the artisan, to any one but the leisured gentleman; and the ideal

of the Renaissance was the courtier, the man whose profession was arms, but who added to his professional attainment social, literary, and artistic culture. The ideal of a democratic society is rather a vocation for every one, a humanist training for all according to the measure of their capacity. Further, for the great majority of adolescents the perception of a purpose in view is the first awakener of intellectual interest. The average boy leaves school with relief to take up the acquirement of a definite trade, and it is not only because it will bring him in wages — these are but the index of its reality and utility; reality is just what his earlier studies seemed to him to lack. Many a student whose arts course left him intellectually unawakened, becomes an eager and generous student of medicine or law when he has descried the purpose and meaning of his studies; and in the past four years many a classically trained graduate and college fellow has turned to problems of administration, industry, and commerce with a zest that Plato and Demosthenes and the problems of syntax and interpretation never called forth. That is the other side of the fact on which Professor Burnet justly lays stress, that his classical training fitted him to solve new problems.

What is a humanist education? Is its aim the training of faculty or the imparting of knowledge of a kind which is not professionally useful? It is not quite enough to say that it is the education which trains human excellence as such; for a man who has no profession (admitting that scholarship is itself a profession, a vocation) is either an abstraction or a

dilettante. Professor Burnet's analysis seems to show, and truly, that a humanist education involves both training of faculty and habits, and the imparting of knowledge of certain kinds, viz. of those subjects which are not necessarily of use for the practice of a particular profession, but which do concern him intimately as man and citizen. The distinction between a vocational and a humanist education rests on the fact that there are certain common ends which concern all whatever their different vocations and purely personal needs may be. These common ends may be summed up as truth, justice, and beauty; and a humanist education is such an education as tends to cultivate a disinterested love of truth, justice, and beauty, a desire to understand something of the world in which we live, a desire to secure a well ordered society in which to live and practise one's vocation, a full appreciation of beauty in nature, and in those arts in which the souls of men express themselves, communicate themselves to one another.

Now as regards the first of these, the training of the intellect to apprehend truth and to desire to do so, the important thing is not the subject which one studies, but the method in which it is studied. French and English may afford just as good a training as Latin and Greek, and what is more important, an industrial or commercial education may, if gone about in the right way, serve the purpose as well as what at present we call a humanist or liberal education. We know how long and obstinate in this country was the opposition to the institution of a systematic training of the teacher. The feeling underlying this opposition was

that teaching is a practical art best learned by practice, that given a knowledge of his subject any one could learn to teach—no amount of experience to the contrary seems to shake this belief. The evidence is evaded by declaring that teaching is a gift and needs no direction and training. As a fact, the training of the teacher is to a very small degree practical. What is aimed at is to liberalise his work by making him conscious of the principles—physiological, psychological, ethical, etc.—on which it depends, that with these in view he may understand what he is doing, may cease to follow a meaningless routine—hearing a lesson learned by a tired boy the night before—may begin to adapt his means to his end under the guidance of settled principles and growing experience. Now it is just such liberal study of their substance, their ends and their means, the principles on which they rest, that our commerce and industry need, and that we have in view in instituting a faculty of commerce, a college of agriculture, a faculty of engineering. The work which these do is not to provide a merely vocational training. In doing so they are also giving a humanist education, because they are cultivating faculty, awakening a knowledge and understanding of principles, and of the means and aims of independent investigation. It was the want of such a liberal interest in his work on the part of the English clerk, even the English man of business, which was the theme of Mr. Goschen's rectorial address at Aberdeen in 1888. The Englishman has been outdistanced by their German rival because the latter "cares more about his work"; because, as a rule, he takes an interest in it apart from its results



in money which . . . the Englishman has not hitherto learned sufficiently to take."

But this, of course, is not the whole matter. A humanist education is not merely a training of faculty. In fact we are less confident than we were of the value of Latin, Greek, and mathematics as general educators of faculty, though Professor Burnet quite justly takes exception to the exaggeration of the view that there is no such thing as a general training of faculty. It is because the mere disciplinary study of Latin and Greek was continued so long, with no introduction to their unique literary and historic interest, that it remained so barren of humanist value. A Matthew Arnold could say of our great classical public schools :

Here are our young barbarians all at play.

A humanist education is concerned with certain subjects as subjects because of their importance to us as men and citizens, as beings who need to acquire not only a disinterested love of truth in general, and the habit of impartial investigation, but who are mightily concerned in the discovery of truth in certain fields, and whose common ends include not only truth, scientific and historic, but also justice and beauty. If the War has revealed the value and the necessity of a liberal study of vocational subjects, of a better, *i.e.* a liberal education of business as well as professional men, it has also revealed the vital importance of a greater width of humanist culture, literary, historical, and philosophical; this is the ground on which classical study can be vindicated: and this is the proper field of the faculty of arts as such.

What the Russian revolution and its reactions in other countries have revealed is that the safety of the professions, commerce, and industry depends on the humanist enlightenment of as large a number of the community as possible. Men and women are not only, and less and less will they be, expert (or inexpert) lawyers, doctors, merchants, manufacturers, bankers, clerks, and artisans; they are also citizens of the world and the State. Regarded in its simplest and most practical way, they are voters on whose understanding and temper the security of society and its callings and institutions depends. It is the immediate and insistent interest of every profession and industry that the education of its members and servants should include elements of a liberal education which do not belong to the school stage—philosophy, history, economics, literature, art—and that, so far as practicable, they should be encouraged to pursue such studies even after they have begun their professional training; and it is the duty of the State and the universities to provide the necessary means.

If, then, one asks who are likely to be the past students of the future, it seems to me that the answer depends on circumstances. In future we want fewer than in the past of the students who seek the degree rather than the education, who are vaguely qualifying for teaching or whatever else may turn up. If, as Professor Burnet hopes, the age of matriculation be put back to seventeen, then we may have to provide once more for the completion of the general education of a considerable number of young men and women who are not likely to proceed to honours. It might

be feasible, as Professor Harrower has suggested in an admirable article (*Aberdeen University Review*, November 1918), to substitute for the general M.A., representing a rather meaningless collection of subjects, several definite types of pass degree (B.A. leading to M.A.), literary, philosophical, historical including economics and constitutional law. Such a scheme would, however, involve considerable changes in the teaching arrangements. A language and literature class, for example, intended for students taking a last year of such study, should not be taught on the same lines as one which is the first step in the ascent to honours. The time is past for composition, construing, and parsing. What is wanted is rapid reading and good lectures on literature and history.

But if it prove impracticable to effect any material change in the age of entrance, such pass students as we shall have are likely to be young men and women already entering on a professional or vocational training; teaching—in which the university should at once take over all the educational work of the training centres—medicine, law, journalism, commerce. The duty of the university will be to see that in the case where this professional education is itself the work of the university or of institutions affiliated to the university, as technical colleges, schools of art, training centres, it shall be conducted in the spirit of humanistic, *i.e.* disinterested, scientific study; and to endeavour to secure the inclusion in the curriculum of an adequate element of purely humanist study, philosophy, history, and literature. No one can

believe that the humanist education of our medical students is adequate. That of our law students has probably fallen, for even when they take the degree of M.A., it is largely by the help of what are really professional studies.

The second duty of the university will be to secure that its classes are made, in every way possible, available for those who, having entered on a professional or industrial training outside the university altogether, yet are required, by the enlightened policy of their employers, or by their perception of their own needs, to seek further humanist, liberal education in their own interest as men and citizens. The activity of bodies like the Workers' Educational Association proves the existence of a demand for knowledge that extends beyond the vocational. The principle of an education continued after industrial life has begun is admitted in the recent Education Acts for those who leave school at the age of fourteen to begin work as clerks or in similar situations, professional, commercial, industrial. The university will have to enter in a more generous spirit than in the past into the humanist education of these and indeed of all classes and conditions of the community. This is the theme on which Sir Henry Jones has dwelt impressively in *The Hibbert Journal*; and if it is not the special and particular work of the university, it is a duty which the Scottish universities cannot afford to neglect.

The vital part of the 1889 ordinance regulating degrees in arts (Ordinance No. 11) were the clauses dealing with the degree with honours, and the

ordinance which replaced it has done still more to encourage specialised honours study. Some 40 to 50 per cent of the annual graduates in the faculty of arts are now honours graduates. The groups of students working for honours in various departments have become the chief nuclei in the university organism, taking the place of the "class" under the older regime. These are the principal and peculiar concern of the university, these young men and women who have the ability to specialise and can find in the pursuit of knowledge in some branch of learning that element of purpose which is wanting to a purely general education, and which less intellectually interested minds find in their professional or vocational studies, so far as these are well directed to the end they have in view. It remains to consider what has been done, and what has yet to be done, to raise the level of specialised honours studies.

There can be no doubt, I think, that the 1889 and subsequent ordinances have raised the level of honours work. The honours candidate was set free from the large number of pass subjects required from him under the older system. Honours classes were instituted which had hitherto been additional, optional classes conducted by the professor or assistant or outside coach. The place of such a coach in mathematics as Dr. Rennet was at Aberdeen has been taken by a fairly elaborate development—*e.g.* in Edinburgh—of tutorial instruction conducted by teachers ranging from student instructors (senior students assisting the work of those who are less advanced) to the senior lecturers and the professor.

The advance may be tested in two ways, first, by noting the extent to which Scottish graduates still find it necessary to continue undergraduate study elsewhere; secondly, by the fitness they show to proceed at once to independent, post-graduate, research work. It was the custom formerly for almost all our most ambitious graduates in classics and mathematics to proceed to Oxford or Cambridge and read there for the tripos or the classical honours schools—moderations and *litterae humaniores*. The custom has almost ceased, despite the attractions of Oxford and Cambridge for the student of these subjects. Those who do go to Oxford read only for *litterae humaniores*. In mathematics, no Edinburgh graduate during the last six years or more has proceeded to Cambridge to read for the tripos, though one or two, after some preliminary training in research here, have gone to Cambridge for post-graduate work. It is due to the failure of the English universities to provide adequately for such post-graduate work and to found scholarships for post-graduate students that the existing practice has continued, for in most of the cases that have come under my own observation the graduate would have gone to Oxford or Cambridge, could he have afforded it, only for post-graduate work; but no college offered scholarships for such work.

If the other test be applied the result will also be found at least fairly satisfactory. In classics and mathematics, in modern languages and English, in philosophy and science, our graduates of the last twenty-five years have done creditable research,

though unfortunately most of it has been done at other universities, and in some cases after further preliminary work elsewhere. The arts faculty in the Scottish universities does not yet make the provision of lectures, instruction, and direction in post-graduate work a part of its curriculum. The only professor at Edinburgh who intimates in the university calendar "Post-graduate and Research Lectures" is the professor of mathematics. "The principal aim of the lectures is to bring into prominence topics suitable for original investigation." Such courses will have to become a regular part of the curriculum in all departments.

The Commission of 1889 showed the same want of any clear guiding principle in legislating for the honours degree, as for the pass. The honours student was relieved of the necessity of passing in all the seven subjects required for the ordinary degree, but was compelled to take up, at first *three*, under the later ordinance, *two*, subjects outside his honours group. The Commissioners had clearly not made up their minds what an honours course of study was intended to be, and what was its relation to a general, liberal education. One of two methods might have been pursued by the Commission, either to exempt the honours candidate from all subjects outside his group—Latin and Greek, English (language and literature with British history), modern languages, history—or, to select these extraneous subjects on some rational principle. But no principle is discoverable in the 1889 regulations except a desire to weight the balances in favour of classics and mathe-

mathematics, much harder conditions as regards extraneous subjects being exacted of candidates for honours in English, modern languages, and history than of candidates in either classics or mathematics. Had the Commission said to themselves, "By adding a year, or even two years, to the school curriculum, we have provided that the candidate for honours shall have made an adequate study of those school subjects in which he is not going to specialise. But we have not made any provision for his having any knowledge of such a distinctively humanist and university subject as philosophy. Moreover, history and English literature, as taught in the university, are quite distinct from what they can be as school subjects. English literature is itself an all important chapter in the history of the English and Scottish people, the history of the national soul, more so than either philosophical or economic history because more concrete, including the emotional and artistic as well as the intellectual and material. We shall require every honours student to include in his curriculum some study of history, British and European, and of philosophy and of English literature." No great hardship would have been involved. The honours student would have been defined as what he really is, the young specialist beginning to detach himself from a not yet completed general training. We should have escaped some of the worst consequences of the new regulations, the production of some of the worst types of graduates for which the Scottish universities are responsible. The third class honours graduate in classics or mathematics who has



included in his curriculum a couple of irrelevant subjects—education, not because he was interested in the subject or looked forward to being a teacher, but because he believed it was easy, and botany or natural history because it could be begun and ended in a short summer session (this was the case at Aberdeen)—is a worse educated man than a good pass graduate. Moreover, even a good honours graduate under modern conditions—and this applies to English as well as Scottish universities—is being educated along such narrow lines that even his work in his own department suffers in consequence. The honours graduate in English literature, *e.g.* of Oxford or Scotland or the provincial English universities, who knows little or nothing of classics, history, and philosophy, is really not qualified to do good work in the history and criticism of English literature because of ignorance of the literary, historical, and philosophical background implied. One would, therefore, still be disposed to make every honours candidate in the faculty of arts study in the first two years of a five years' course philosophy and either history or English literature. But one recognises that there are objections, educational as well as practical, to prescriptions enjoining extraneous study, and that the same result might, in some cases, be achieved along another line.

For there can be little doubt that, when a student of capacity reaches the "epoch where a discursive range from province to province of information must give way to the inverse process of concentrating the energies of the intellect in undivided

intensity upon some one object," his mind resents intensely any diversion to alien or even extraneous studies. I can well remember the abhorrence with which a student of chemistry at Oxford regarded his compulsory Greek; and it was not from any want of ability to master that or any other subject, but from a feeling that for him it was a useless and senseless task. If such a specialist discovers, indeed, that another subject has a bearing on his own which he must understand, that the knowledge of another language is a key which he must possess, he can as a rule master the subject or language, sufficiently for his purpose, rapidly and readily. But his mind shrinks from dabbling in subjects that do not concern him unless he does so with the distinct feeling that it is as a recreation. The enjoyment of a novel read in hours of hard work is not itself half so keen as is the enhanced gusto with which one returns to arduous but welcome studies.

It may be, then, that it is a mistake to induce an honours student to dabble at all in other studies that have no bearing on that in which he is specialising. He is not quite in the position of a man immersed in professional or industrial pursuits and thoughts, whose mind welcomes some escape into purer regions, craves for knowledge of what concerns his wellbeing as a man, disinterested study of historical or philosophical or scientific problems, or the joys of literature and art. For the student's own field of study may include so much of this. I should be disposed to argue that in the work, *e.g.* for classical honours, were planned to include not linguistic study only, but a really adequate

study of literature and history—something a good deal more than enough to explain the texts read—the work of the classical student would include all the requisite elements of a humanist education. The rest might be left to his own reading rather than compulsory study. So with modern languages. The present coupling of French and German is admittedly provisional. When we can provide a sufficient range of teaching, French will be quite enough by itself, if the study of the language be taken as an instrument for the wider study of the history, the thought, and the literature of France, perhaps also French art. The suggestion need not be developed further. A good example of what an adequately inclusive course of honours study might be is given in the school of *litterae humaniores* at Oxford, and perhaps in the prescription for honours in history at Edinburgh—history being the one subject for which something like adequate provision is made, in the faculty of arts at Edinburgh, for manysided instruction, having four professors, besides a professor of economics, and several lecturers. Yet even here the history of English thought and the history of English literature might be included in the list of optional subjects. One of the questions, at least, which call for reconsideration is the constitution of our honours groups within themselves. Their definition has been left perhaps a little too entirely to the individual professor; the board of studies has confined itself to receiving reports; there has been no attempt to think out the possibilities of co-operation between departments. A well thought out, comprehensive honours

course is the proper introduction to independent research in a more limited field.

And this brings us to what is the really crucial question. Who are our honours students, and what are we training them for? The question concerns the English universities, *e.g.* Oxford and Cambridge, quite as much as the Scottish universities. I have spoken earlier of honours studies as providing the bridge from general culture to that highest work of scholarship which consists in investigation, research according to the scientific principles which govern such investigation in different fields—the sciences, philosophy, history, etc. The want of such a bridge in the American universities, if I may judge from some small experience as well as from the report of those who know, has led many an American student into research before he has acquired a wide and deep enough knowledge of the whole field of his investigation. On the other hand, it is a very material question whether in this country we have not paid more attention to the bridge than to the country beyond it. We have strengthened and lengthened it in the improvement of our honours studies, but it is still in the air, because we have not yet in our universities, at least in the faculty of arts, a sufficient body of students who, having passed the honours stage, are engaged in what on the Continent is regarded as the proper work of the university, the acquirement of the principles and methods of original investigation and their application in some selected field.

Who are our honours students, and what are we training them for? A large proportion are studying

with a view to becoming school teachers, heads of departments in the subjects—classics, English, modern languages—which they profess. An honours degree is now a condition of holding such a post in a secondary school receiving grants from the Scottish Education Department. Some of the best of the men are preparing for the Indian and home civil services, the age of passing into which has been for the last thirty years from twenty-two to twenty-four. A smaller number hope to proceed to higher, original work, and to become university lecturers and professors. To do so they will probably have to proceed, with the help of a Carnegie or other scholarship, to some university in England or on the Continent to acquire the methods of investigation and guidance in their work, or must spend a year or more in discovering them for themselves. The character of our honours teaching is determined by this fact. Honours work does not differ essentially from pass work. It consists in preparing for an examination, dogmatic instruction supplemented by reading, and tutorial instruction in what is already known, not investigation. The work of a Scottish professor who takes his duty to his students very seriously, is, like that of an Oxford tutor, largely a business of training pupils in examination gymnastics, and with the advantage, or disadvantage, that he is himself the principal examiner. Attempts are made, here and in the provincial universities in England, to modify the system by the introduction of a thesis. But the result is only partially successful, an attempt to blend two different types and stages of work, with

the result that the thesis becomes, either just an essay done at home or, if it has any value, it absorbs so much of the student's time that he may fail to do himself justice in the written papers. The thesis is not well adapted to a competitive examination.

The crucial question is, are we justified in encouraging young men and women to continue till the age of twenty-three or twenty-four a training of this examination character, an education which has for its main end the power to make a brilliant appearance in papers that have to be written in three hours. The age of the Indian civil service examination is now to be brought back to nineteen—a change which will hit Scotland very hard, supposing that the service still remains an attractive one for young Scotchmen, unless some corresponding change takes place in the age of entering the university and of completing honours work. The chief reason for the change is understood to be that after twenty-four the entrants to the service do not so readily master Indian languages and adapt themselves to their new requirements as they would do if they entered on their vocational training at an earlier age. Is it to be wondered at, that, tired of a long training merely for examinations, they have been loath to recommence the learning of languages, law, and similar subjects? Surely by twenty-one a young man should have at least either begun or be beginning a purposeful vocational training whether for a profession or government service, or, if scholarship, learning, higher teaching is to be his vocation, he should have escaped from the period of examination

drill and be beginning as a free, responsible student, guided rather than instructed, to study and apply the methods of scientific investigation. This is what many of our most brilliant honours graduates have not yet been trained to do. If granted a Carnegie scholarship for research they lose a year or two in acquiring new methods of work, unless at some other university they find the guidance they have not got at home from a training directed to teach them to write good compositions and translations and to discourse rapidly at second hand on a wide range of historical and critical questions.

For the method reacts upon the teacher. A conscientious professor cannot lose sight of the needs of his pupils, and as regards opportunity for original work he is in a worse position than his predecessor before 1889. He has lost the long summer vacation. If his teaching is on a somewhat higher level than before, when the professor taught only ordinary classes, it is not yet on the level or of the kind which it is possible to connect easily with his own research, where he could make his students co-workers. From October to the middle of June he is immersed in lectures, tutorials, examinations, and affairs; nor are honours lectures to-day of a kind that need little or a stereotyped preparation. He lectures to the ordinary class in a more or less general or popular way, or gives instruction of a more or less school character. He lectures to the honours class on a more advanced level over a more restricted field which varies from year to year. He has no class to which he can lecture straight from his own work,

setting forth the methods he is using, examining the details on which his progress depends, revealing his own mind as it works towards conclusions, tentative or final. Such lectures would be lost on an ordinary class, and even for an honours class would be too specialised for their examination purposes.

For the honours student, therefore, as well as for the pass student, we want some putting back of the age of entrance and therefore of graduation. If the honours examination—whether as we have it at present, a competitive examination with classes, or, as Professor Burnet seems to contemplate, a higher pass examination—is to continue to be, not merely a preparation for the pursuit of higher scholarship on the part of a few, but the final stage in the general humanist education of those who are to be the *élite* of our learned professions, our industry and commerce, and our civil service, then this stage must end by about twenty-one, setting free some for professional training, others for the pursuit of higher learning with no further regard to examinations; and we must provide within our universities for the instruction and guidance of such post-graduate students.

(1) The professor will need to be himself a worker quite as much as a lecturer. It may be that in Germany too much stress has been laid on this qualification, or too little on others, but the ideal is a sound one. "Scientific productiveness is so sharply emphasised among the conditions of admission that it overshadows all the rest. In the requirements which the candidate has to meet stress is laid, not upon the extent of his knowledge and his readiness to impart it, not upon



the elegance of his diction, not upon the formal aspects of his lectures, but upon the scientific content of the work presented by him, upon the evidence it shows of his capacity for original research" (Paulsen). For the work which a Scottish professor has to do and will still have to do, if the university is to deal with all the classes of students described above, we shall still need men with some of the tradition of eloquent exposition on which France and Scotland have laid stress. But high scholarship should not be sacrificed to eloquence—though there are subjects in which the latter quality is more useful than in others—and if a professor has no great gift of popular exposition, the work of teaching the ordinary class should be handed over to a well qualified and adequately paid lecturer appointed for the purpose.

(2) The professor must be assisted in a large part of the undergraduate work by a staff of assistant lecturers sufficiently well paid to secure their services for some time, and sufficiently numerous to allow them also to pursue original work. The tenure of a lectureship should depend to some extent on the lecturer showing himself able and willing to pursue such work. The professor should, as a rule, lecture to the ordinary class. There is no such introduction to a subject as a good survey of the field by one who is a master of that subject, and there is nothing in which great English scholars have more excelled than this popular yet scholarly presentation of their subject, *e.g.* Huxley's *Lectures*, Stopford Brooke's *Primer of English Literature*. But in a great part of the honours work he should or might, as his post-graduate

work increased, direct rather than teach. One is inclined to doubt whether the institution and multiplication of honours classes has been altogether or largely a blessing. They have increased the tendency of students to cling to lectures, especially in the case of women, the most docile of students. In old days one read for honours by oneself, and there was something wonderfully stimulating, after the introduction of the ordinary class, in being flung out to find one's own way in Kant and Plato and other authors. Doubtless one wasted time and went astray. A guide is needed if only to tell one what *not* to read. But honours classes should be largely tutorial, and lectures should be given by as many and as varied minds as possible, and they should be short courses clearly intended only to supplement the candidate's own reading. Neither the professor nor the lecturer must be overweighted with teaching of the instruction imparting or coaching kind, if he is to be an original worker able to guide the work of his highest, his post-graduate students. The Carnegie Trust exists to strengthen the university. It can do so better by developing existing departments than by erecting new ones. But two conditions should govern its institution of new lectureships. If they are of a junior and assistant type they should be in the nature of fellowships tenable on condition of work being done. If the new lecturer is to be the head of a department, the Trust should insist upon his being a member of the relevant faculty, and should found no such lectureship without provision for the ultimate foundation of a chair. We need more

professorships, too, than one in a department such as English or French or natural history, etc. It is contact with many independent minds that stimulates an able student to think and inquire for himself.

(3) Lastly, it remains to consider whether there are not resources in Scotland which the universities have neglected, and which might be brought in to aid the honours or, at least, the post-graduate work.

A great source of strength to the German universities, in the past at any rate, was found in the *Privatdozent* system whereby a young scholar might, at his own risk financially, become, with the approval of the university authorities, after certain tests, a recognised lecturer in some department. Circumstances in this country, and the plan of our studies, render it unlikely that such a system will become prevalent here. The bulk of university teaching must be done by the professor and his departmental staff, but even for honours students, and still more for post-graduate work, there are resources outside the university which should be utilised. Only a year or two ago the *Times Literary Supplement* commented upon the fact that the two most noteworthy contributions made to historical science in Scotland in the year came from scholars quite unconnected with the university. I do not imagine for a moment that men of the distinction of the writers in question, Dr. George Macdonald of the Scottish Education Department and Dr. Mathieson, could be asked to undertake to give lectures to honours students at the stage which such

students have reached at present. But once the universities had numbers of post-graduate students working for higher degrees, it should not be impossible to get from scholars like these, or like Dr. George Neilson and others who have done so much for the Scottish Texts Society, short courses of lectures on the methods of research and the fields in which research is most called for. Such lectures would be of the highest value to our students, and not only so, but would help to attract to the university higher students from other universities and countries. The difficulty of inviting lectures from such scholars at present is that we have no special audience for them, no students whose work they can help. In 1914, just before the War broke out, the University of Aberdeen appointed the late Dr. Jakobsen of Copenhagen to give a short annual course of lectures on Icelandic or Old Norse philology. The idea was excellent, yet it was difficult to fit the course into the work of the mere honours student without overburdening his examination curriculum. Even on a less high level than such scholars as these, there are in all our larger Scottish towns scholars of distinction, brilliant philosophical students who have entered the ministry, retired Indian civilians who are masters of Indian languages, students working by themselves in various fields. Care would have to be exercised in granting recognition, but when competent and adequate they should, if they wished, be recognised as extra-mural teachers for honours and higher degrees, and the fees of those who attend the courses should be paid by the Carnegie Trust. The teaching in contemplation

will not attract the "coach" who must live by his work, but the scholar who feels a little alone, who might welcome some connection with the university, and above all some contact with younger minds, younger scholars treading the path in which he has preceded them. Each department, too, should have at its disposal funds wherewith to secure occasional courses of lectures from such scholars of distinction. Lastly, for higher, post-graduate work there must be a free interchange of students and co-operation of teachers among the Scottish universities. It has been suggested that the different universities might specialise in different directions. Any *a priori* stereotyped arrangement of this kind would be a mistake. An element of competition between universities is entirely desirable. But it should be possible for the various departments to consult and interchange information as to higher courses. A student would be guided by his needs and the character of the teachers he could find. A student of Greek philosophy might find special opportunities at St. Andrews, one of patristic literature at Aberdeen.

This would seem to be the direction in which the universities must grow if they are to complete their development and attain the full measure of their stature, "to induct their pupils into the highest course of knowledge, to train the intellect to the investigation of the laws of nature, man, and society—an investigation which shall be based upon an exhaustive knowledge of the phenomena in each case, and shall employ all the powers of the reason in ascer-

taining the relations between the phenomena . . . nothing short of this can be the aim of any establishment for superior education, such as a University." In some way we must shorten the period of examination gymnastics, whether by substituting a higher pass for the present competitive honours examination, or it may be by limiting the present requirements which under the pressure of competition and the desire to make the examination a test of the highest scholarship have become, at any rate in some subjects, almost too exacting for the candidate who is seeking simply to qualify himself as a school teacher or complete his general education, while they have compelled the scholar to linger unduly at this stage. Or it may come to be necessary to draw the future scholar aside and encourage him to quit honours studies at a certain stage and seek rather for a higher research degree. We must find in the Carnegie scholarships the means of helping him, and a condition of tenure for at least the first year is that he should continue to study the methods of research at the university. Finally we must secure all the requisite teaching and material.

Nothing is to be gained, one feels sure, by any radical change in the character of honours work, which would substitute for our present drill a premature attempt at research work. We have seen what that means both in Germany and America—the multiplication of valueless theses, work done at the expense of a thorough preliminary training such as our honours courses undoubtedly provide. But we must not, by raising the standard unduly, carry

on this purely examination work to too late a period. After a certain stage what is needed is not work of this examination kind, even on a higher standard, but a different type of work to wit, investigation and research.

The practical question which still remains to be considered is, how far can the universities be trusted to adapt themselves to the needs of the national situation, to reform themselves, so far as reform is needed, from within, under the present arrangements for government by senatus and court. The present writer, as a member of senatus, is perhaps not the best person to discuss the question, but he will do so quite frankly and according to his lights. On certain proposed changes little need be said. The position in which lecturers were left by the 1889 Commission, without any voice in the management of the university outside their own classes, is confessedly absurd, and steps are being taken to secure their representation on the faculties. If this were done, and if it became the settled policy of the universities and the Carnegie Trust, to establish no independent lectureship, as distinguished from an assistant lectureship, without making provision for its being gradually raised to a professorship, most of the difficulties of the situation would be met. But even if all the lecturers were admitted to the senatus, that would not radically alter its character. It might become more (or less) efficient for the discharge of its routine duties, the regular work of carrying on through its faculties the administration of the ordinances as they stand. It would not become

a body better fitted to initiate general schemes of reconstruction.

What makes a senatus a conservative body, indeed so very conservative that, till recently at any rate, no reconstruction of the curriculum had ever been carried out by the universities themselves, is that, it consists of a congeries of experts, each primarily interested in his own subject and department, and jealous of interference from without. Unwilling to be interfered with, each is, as a rule, chary of interference. But it is impossible to effect any reconstruction of a curriculum of studies without the risk of treading on some one's corns, be it to change his hour of lecturing or to spend more money on another department than his own. It is very difficult for a body of individual experts to rise to a detached view of the question and admit that, important as every subject is in itself, yet from certain points of view and for certain generally admitted purposes, some must be provided for more extensively than others. The attempt that was made some years ago to render the curriculum for the pass degree more coherent by providing for double courses in two subjects of every curriculum—except where two subjects were so cognate that the one was a real introduction to the other, as political history to constitutional, etc.—was, as already mentioned, defeated by the unwillingness of certain professors to arrange for double courses, or evaded by calling subjects “cognate” which had no real inter-connection of the kind intended. French is not an introduction to German as Latin is to French.

If it is the case, then, that some measure of



reconstruction is needed, and that the senatus is not likely of its own initiative to advance at all boldly in the path of change or development, is there no alternative but a Commission like that of 1889 or the constitution of a new body to do the work of the senatus? The present writer has no desire for, or belief in, either. We have had experience of Commissions reforming the universities *ab extra*, and we have no wish to repeat that experience. Nor is any other body so well fitted to carry on the general educational policy of the university as the general body of teachers. The chief requirements seem to me to be: (1) From time to time an effective impulse to reconstruction from without; (2) the possibility of appealing from the senatus to the university court or some independent body when the head of a department believes that the interests of that department are not receiving all the consideration they deserve.

If the universities are to receive additional grants from the Treasury, as they seem likely to do, some sort of inquiry will be instituted. If a small but efficient Commission were established and authorised, not to dictate or legislate, but to call on the universities themselves, as a condition of receiving grants, to prepare and lay before them schemes (1) for making the pass curriculum suitable and available for various types of students preparing for, or already entering on, a professional training, as teachers, or in commerce, industry, etc.; (2) for doing the same as regards honours studies, and for making the honours teaching in every department adequate; (3) for providing

for post-graduate students for higher degrees and pursuing research studies; there is no doubt that the senatus working through its faculties, and directed by the court, could without great difficulty elaborate a distinct and definite policy regarding what the university proposes to do and what are its needs. Any department which considered itself neglected would have a right of appeal, from the board of studies through the various intermediate bodies right up to the Commission. It might indeed be well to go further and utilise the existing Universities Committee of the Privy Council, with no power to legislate or to interfere, but to consult and advise and control the making of grants. Archimedes undertook to move the world if given a "punctum stans" outside it. The Scottish and other universities require to have a periodical impulse imparted from without. They have never benefited by external interference and control, and they have nothing to gain from the institution of governing bodies representing many and alien interests: councils such as administer the affairs of some of the English provincial universities. The best administrative bodies are those which are likely to feel most acutely and immediately the consequences of their own errors.

There are other questions which space will not permit me to do more than mention. The passing of a new preliminary examination ordinance should lead to the relief of the many vexatious injustices which the old system of exacting a pass in each subject involved. The Joint Board made no effort except

to a limited extent in the medical preliminary and that in a very mechanical way—to survey a candidate's work as a whole and allow excellence in one direction to compensate for some falling short in another. For candidates attending classes, but not seeking a degree, no general 'preliminary' will be required, and, as indicated above, it is the hope of the present writer that the number of such students will increase. For the pass candidate any adequate leaving certificate should be accepted or any alternative test of an adequate general education. It is for the honours candidate alone that it seems right and reasonable, in the interest of his own studies, to insist on certain definite subjects, such as Latin for the candidate in any of the literary or historical departments, and mathematics, with perhaps some alternative, for the candidate for the honours B.Sc.

Study is the chief, but it is not the whole work of the university. We learnt more at the university from our fellows than our teachers, from the societies than the classroom. To develop social intercourse, to relieve the terrible loneliness which has been the fate of some, perhaps many, students in lodgings, is one of the demands of the future. The students' union does something, but it has never been able to bring in all the students. It is a question whether the present unions should not be taken over and financed by and for the universities, leaving the management much as it is, but opening them to all as opportunities for social intercourse and the satisfaction of common needs. The wealthier students who seek more ex-

clusiveness would find other clubs and societies they could also join. The question of residential hostels will need further consideration, but it is not at all certain that anything like an adoption of the English system is either practicable or desirable. The freer, more responsible life of the Scottish student is an element in his moral and intellectual training.

To enhance their efficiency, to maintain and strengthen their democratic character must be the sole aims of a reformer of the Scottish universities, for their prosperity must depend upon the degree to which the Scottish people feels them to be her own peculiar care. Professor Burnet has brought out with a clearness and fulness which makes his account a revelation to many of us, the close relation between the German universities and German bureaucratic despotism. They exist to educate the *élite* who until yesterday ruled the nation under the control of the army. But as no provision is made to facilitate the upward progress of the "lad of parts" from the lower ranks of life, it is the ability to afford a prolonged education which is the talisman that admits to the privileged order. A democratic people like ours wants not only an intelligent and educated ruling and directing bureaucracy, recruited from every class, but an intelligent and educated people to criticise, direct, and control its bureaucratic administrators. It matters less who administers if an intelligent people knows what it wants and is determined to get it. The Scottish universities have drawn into their classes at all times the young intelligence of every order. To widen, on no account to contract, their *disciple*—

by going out to it if it cannot come in to them—while raising ever higher the level of the culture they afford, must be the earnest and sleepless endeavour of the native universities, as of all who have served and serve the great Scottish people. ‘ ‘

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